VEDIC AND INDO-EUROPEAN STUDIES

Nicholas Kazanas

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Almost all the studies in this volume deal with subjects of Vedic and I(ndo-)E(uropean) provenance, i.e. relations of Vedic with Greek, Latin etc and the fabricated Proto-Indo-European itself. Moreover, all the essays kick off from the *RV* (*Ṛgveda*). They move centripetally from the RV to the diverse areas of Anthropology, History, Linguistics, Philosophy, Poetry and Religion, examining one or other aspect from a new perspective and leading to new unexpected conclusions. When the evidences from Sanskrit and the RV are cosidered, the current theories about, for instance, the origin and development of language and religion are seen to be faulty and in need of thorough revision.

In addition, the cumulative evidences from all these different areas (and others) show that the Indoaryans are indigenous to India from at least the 7th millennium BCE, that Vedic is much older than any other IE language and closest to the Proto-Indo-European mother tongue and that all past and current IE studies should be scratched and a fresh start be made, if it is still thought to be necessary.

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Vedic and IndoEuropean Studies

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Contents

Abbreviations and signs for languages and texts

AB = *Aitareya Brāhmaṇa;* *AV* = *Atharvaveda;* *Av* = *Avesta;* *Br* = *Brāhmaṇa(s);* *B Up* = *Bṛhadāraṇyaka Upanishad;* *ChUp* = *Chāndogya Upanishad;* *MB* = *Mahābhārata;* P = Pāṇini's *Aṣṭādhyāyī;* Ppl = Paipalāda; *Ra* = *Rāmāyaṇa;* *RV* = *Ṛgveda;* *ŚB* = *Śatapatha Bhāhmaṇa;* *TS* = *Taittirīya Saṃhitā* (Black YajurVeda); Up = Upanishads; VS = Vājasaneyī *Saṃhitā* (White Yajur Veda).

adj = adjective(s); Alb = Albanian; AIT = Aryan Invasion/Immigration Theory; aor = aorist; Arm = Armenian; Av = Avestan; B = Baltic (=Lth, Ltt, OPr); C = Celtic (=OIr, Gallic, Welsh, etc); cf = compare; cpd = compound; Cret = Cretan; cogn = cognate(s); dial = dialect; E = English; exc = except; f = feminine; F-U = Finno-Ugrian (=Finnish Hungarian etc); gen = genitive; Gk = Greek; Gm = Germanic (Gth, OE, OHG, Old Norse etc i.e. all or any one branch); Gth = Gothic; Gyp = Gypsy; Hes = Hēsuchios (a Gk lexicographer); HG = High German; Ht = Hittite; IA = Indo-Aryan; IE = Indo-European; IEL = IndoEuropean Linguistics; IIr = Indo-Iranian; Ion = Ionian Gk; Ir = Irish; Irn = Iranian; Ks = Kassite; L = Latin; lex = lexicon; Lith = Lithuanian; Ltt = Lettish (=Latvian); Ltv = Latvian (=Lettish); m = masculine; M = Middle; Mcn = Mycenaean; Md = Modern; Mt = Mitanni; n = noun; N = Norse; NE = Near Eastern; NIGT = Native Indic Grammarian Tradition; nt = neuter; O = Old (before other designations, like OAv=Old Avestan; OIr = Old Irish = one branch of Celtic); OC(P) = Organic Coherence (Principle);

Osc = Oscan (=an Old Italic language); pas = passive; perf = perfect; Phr = Phrygian; PIE = Proto-Indoeuropean; pl = plural; PP = Preservation Principle; pr.n = proper name; Pr = Prussian; Pur = ʼPurāṇa; R = Roman; Rs = Russian; S = Sanskrit; Sc = Scandinavian ; sing = singular; Sl = Slavic (= any other branch: Bulgarian, O Bulgarian, Serbo-Croatian, Russian, Polish etc); Su = Sūtra texts; T = Tocharian A or B, or both; Umb = Umbrian (old Italic); V = Vedic; vb = verb; Vl = Vowel; voc = vocative; VT = Vedic Tradition; YAv=Young Avestan.

Introduction: aspects of scholarship

1. As the title *Vedic and Indo-European Studies* indicates, this volume consists of studies dealing with common subjects in both areas so that one may illuminate the other. Following facts rather than conjectures and reasoning rather than repetition, I arrive at unorthodox conclusions that diverge from mainstream (usually mechanical) thinking.

The most significant conclusion is that the *Ṛgveda* furnishes facts that militate against many prevalent notions in many disciplines and studies in academia like the beginning of language or religion. Another conclusion concerns the origins of the Indoaryan or Vedic people and the obnoxious Aryan Invasion/Immigration Theory.

The AIT (=Aryan Invasion/Immigration Theory) is a major impediment in mainstream IE (=Indo-European) scholarship but it is not the only one. In fact this is an external structure established by other, internal or psychological, tendencies like inattention, love of ease, mechanicalness, arrogance, obstinacy, ambition, greed etc, all sprouting from an unchecked ego: all these can be encapsulated in the triad arrogance, greed, ignorance (more in the sense of ignoring than not knowing). And it is these that often motivate us rather than love and promotion of truth, the primary purpose of all scholarship. (And if your mind, dear reader, rejects all this as claptrap unrelated to scholarship, then it is in the thralls of the triad.)

The AIT has thrown its obscuring and distorting shadow over the entire region of IE as well as of Old Indic studies. All indoeuropeanists and almost all sanskritists take this Theory

for granted: namely that a force of IE speakers arrived at Saptasindhu, the land with the network of the Indus and other rivers, in what is now N-W India and S-E Pakistan. In the older version, these invaders conquered the natives c 1700-1500 BCE and turned them into a servile class mainly or drove them off south-eastward. In the later revised version they were immigrants who entered the said area and mixed with the natives but, now, for indeterminate reasons managed to impose their highly complex language (=Vedic/ Old Indic/Sanskrit) and their general culture, absorbing at the same time many elements from them.

To a mind free of the conditioning of mainstream mechanical repetition this Theory seems strange if not preposterous, having no basis in fact or reason; for it is not supported by evidences of any kind but only layers of assertion based on conjectures formulated and developed in the 18th and the early 19th centuries (as I shall show below in §5-7). But it took root and became mainstream dogma, a "linguistic doctrine" (Emenau 1954), since scholarship, whether academic or informal, ceased to perform its higher function of pursuing truth and elevating the human mind, and limited itself to the grosser aspect of promoting pet theories and pedantry around received doctrines and self-seeking.

2. From a very long experience of reading, studying and teaching, of participating in Conferences and, in recent years, of editing articles for Journals (and, of course, private contacts and exchanges with scholars in many fields) I acquired the certainty that very few academics use their reason to the full and even fewer are, despite their vociferous protestations to the contrary, interested in truth. Let us look at some examples that illustrate my point.

a) In the *nāsadīya-sūkta* of the *RV* (=*Ṛgveda*), 10.129 (or Creation Hymn as is known to Western scholars), the first three stanzas inform us that "then", in the very beginning,

before anything of creation had manifested (i.e., before the Big Bang), there was not being nor non-being, no space nor highmost heaven, no mortality or immortality, no night or day: i.e. there were no dimensions of space and time and no beings. There was only undifferentiated darkness covered by darkness and emptiness. There was only **That One**, breathing naturally, of its own power, without air (since there was as yet no air!). Apart from That One, which was also *ābhú* — 'emerging into being' and from which all else (all that we know as creation/world) would manifest, there was absolutely nothing!

The statements are plain and unambiguous.

The first stanza ends with a question *ámbhaḥ kím āsīd gáhanaṃ gabhīrám?* 'Was it *ámbhas* fathomless, profound?'

Countless generations of scholars and scholiasts translate the word *ámbhas* as 'water'; and the question — 'Was it water ...?'

But how could there be water when nothing at all existed except That One, which breathed with innate power without air? Could water breathe? Could water be no space, no heaven, utter darkness enveloped by darkness and emptiness? Could water be *ābhú* 'emerging into being' or 'coming into existence'? ... The answer is simply 'No!'.

Now, in other contexts *ámbhas* can designate 'water' and there are cognate words like *abhrá* 'cloud', *ámbu* 'water'. Also, in other ancient cosmogonies in Mesopotamia, Egypt and Greece (but not China), we find that our material world does arise out of primordial water. Presumably these facts plus the adjectives 'fathomless' and 'profound' suggested the meaning 'water'.

But *ámbhas* is found also with the meaning 'fruitfulness, potency'. Since the hymn states unequivocally that "then" nothing other than the Breathing One existed, surely here also *ámbhas* should mean 'unmanifest creativeness, potency' and thus give a basis for the subsequent *ābhú* 'emerging into being'.

I pointed this out at least 10 years ago and several times afterwards. Nobody took it up. On the contrary we still read and hear of 'water' ("Water water everywhere and not a drop to drink").

b) Then, in the 3rd stanza we find the word *salilám* which in other contexts also means 'water', especially in later texts. But here too nothing has yet been created or made manifest. The line (2) –

ā[s]praketáṃ saliláṃ sárvam– (s) idám

'indistinguishable *salilám* was all this [world we know]'. The line before (=line 1) says that "in the beginning *ágre* there was darkness *támas* covered with darkness". The next line (3) says that "what-was-emerging-into-being *ābhú* was enveloped/overlaid *ápihitam* by emptiness/void *tuchyéna*". So, again, how and where does 'water' fit here, with darkness, emptiness and the creative/evolving principle "emerging-into-being"? There is no hint here or elsewhere in the hymn that the Breathing One, the Creative/Evolving Principle, or the manifest world, arose out of water. In fact, the next stanza (4) says that, again, "in the beginning *ágre* desire *kấma* evolved-wholly-upon that". It is no more likely that the water desired than that it breathed. No, as with *ámbhas, salilá* here does not mean 'water'; it indicates the unmanifest field of potentiality, the flux of potency and energy from which the creation would manifest. (*salilá* < *sal-/sar-/sṛ/* = *gatau* 'motion'.)

In this hymn, then, water is not the primordial substance out of which manifested the entire creation, as the Greek presocratic philosopher Thales believed.

c) For the third example I go to the distant field of Psychology/Psychiatry. Many aspects today seem to demand radical revision. Dr. R. Melzak wrote some 25 years ago: "The field of psychology is in a state of crisis. We are no closer to understanding the most fundamental problems of

psychology than we were when psychology became a science a hundred years ago" (1989:1). However, here I shall focus on the element of dreams. Freud's views have been modified or pushed aside by many subsequent practitioners like Adler, Jung and others. But no clean break was made and no fresh start. Consequently many errors in theory and practice continue. Therapists still utilise the patients' dreams as part of the method of promoting a cure.

In his massive book *The Interpretation of dreams* Freud writes: "Dreams are the GUARDIANS of sleep and not its disturbers (p 330)... The restoration of the connections which the dream-work has destroyed is a task to be performed by the interpretative process" (p422) etc, etc. Then, later, in various places in his *Collected Works* Jung writes about dreams: "They are pure nature; they show us the unvarnished natural truth and are therefore fitted ... to give us back an attitude that accords with our basic human nature" (vol 10, §317). This is, of course, highly doubtful, to put it mildly, while the statement that follows is flagrantly self-contradictory: "They do not deceive, they do not lie, they do not distort or disguise(!?)... They are invariably seeking to express something that the ego does not know and does not understand" (vol 17, §189). Jung laid emphasis on the "collective unconscious", on images and archetypes which are intuitive ideas (vol 15, §105) and soul-images or symbols that "mean more than they say [presenting] a perpetual challenge" (vol 15, §119, my bracket). Such are the Grail, the Cross, the Sun, the Witch-doctor, the Snake etc (see especially vol 12).

Jung's adherents follow him faithfully. Thus Dr. E.F. Edinger gives many examples of such dreams and their interpretation having as reference frame the collective unconscious and archetypes (1992: 70, 84, 174, etc etc) even though many of these are specific to particular cultures and have no basis in reality, like the Adam-and-Eve tale, the green colour ascribed to the Holy Ghost etc.

But the real difficulty is the fact that people do not remember the whole dream and either leave gaps or fill them in with their own fabrications. Many of the reproduced dreams in these publications read like literary compositions. I have asked many students of mine about this and they all admitted to not remembering fully their dreams. I don't remember them either except vaguely and in fragments. Moreover, and this is most important, some people make up entirely the dreams they narrate. Some years ago, a friend had sessions with a therapist and confessed to me that he felt the therapist wanted to hear dreams of a more or less particular type; so on the way to the session he actually made up dreams of that particular type.

Thus dream interpretation can hardly be reliable. But it is used fully.

3. Let us now go to Greece holding in mind the adjective/name *ṛbhú* 'intelligent fashioner'. Scholars generally agree that this word is cognate with English/Germanic *elf* (Elfe, Alp etc), Old Slavic *rabъ* 'servant' and the name of the Greek poet-musician-hero *Orpheus*.

In the *RV* (1.20, 110; 3.60; 7.48 etc) the Ṛbhus are three brothers, sons of Sudhanvan who perform several miraculous deeds "through the power of mind". For instance, *RV* 4.2 says *rátham yé cakrúḥ suvṛtam sucétaso [ā]vihvarantam mánasas pári dhyáyā* The wise-ones who fashioned the fine-rolling, impeccable car by visionary power *dhī-* out of mind *mánas-*'. But the three are often indicated by the singular Ṛbhu as one. Thus in the *RV* the name appears both in the singular and in the plural. The three brothers, though mortal, thanks to their great mental power gain the favour of the gods and stay in the mansion of the Sungod where they serve as priests and there become immortal gods themselves.

The Slavic 'servant' can be put aside as of no significance other than the cognation *ṛbhu — rabъ*. The

Germanic *elves* are in the plural, a whole tribe of them. They are of two kinds: the dark ones live underground and are often identified with the Dwarfs who often are greedy and who are craftsmen dealing with metals, precious stones and other minerals; the fair ones live in the light in Alfheim, are associated with the sun and can heal. Thus it is not difficult to see the connection with the rigvedic Ṛbhus.

Greek Orpheus was a figure of veneration from very ancient times and a multitude of legends were woven around him. He too was a clever craftsman with music and became a devotee (and in later legend a priest) of the Sungod. Only instead of gaining immortal godhood he was torn apart by the Maenads; his head was thrown into the river Hebros, floated still singing into the sea and finally was washed ashore on Lesbos where a shrine was established giving out oracular prophecies. A different strand has him killed by the lighting of Zeus.

Here again countless generations of ancient and modern scholars tried to trace his antecedents. Some said Orpheus was a historical figure who performed miraculous deeds and founded a religion — "Orphism". Others said he was the son of the Sungod or even the very incarnation of Apollo. Some said his origin was to be found with the Thracians or the shamans in the Hyperborean regions (and farthest Siberia); others claimed that he came from Anatolia and still others argued that he was a native Greek and/or son of Oiagros.

But, of course, Orpheus is a PIE (=Proto-Indo-European) figure, as the evidence shows and some IEans brought a memory of him with them when they came and settled into Greece, in the 3rd or the 2nd millennium BC. Although this fact is now well-known among IE scholars, classicists continue to speculate and argue in their accustomed vein.

4. Closely connected with the Orphics are the Pythagoreans. Both held the idea of reincarnation, albeit clearly, not in their early but only in their later traditions.

Now, since the very early Greek literature of Homer, Hesiod and other poets until Pindar and Empedocles (early 5th cent BCE), shows no definite knowledge of this doctrine, hellenists tend to accept what Herodotos says in the second Book of his *Histories* (2.123), namely that Pythagoras brought it into Greece from Egypt. In fact several scholars have the Greeks importing many ideas into Greece from the Near East (e.g. Penglase 1994; West 1971, 1994).

However, neither Homer nor Hesiod are reliable witnesses for the PIE lore that the Greeks brought with them. The traveller-geographer Pausanias of the 2nd century CE records (7.25.5) a legend about Dēmētēr Erinūs from Arcadia in South Greece: the goddess became a mare to escape from Poseidon but was discovered by the Seagod, who then became a stallion and mounted her, and from their union were born Areion, a splendid white horse, and Despoina, a beautiful girl. Now, this must be a PIE mythologem since it is found in a slightly different form in the Nordic mythology with Loki becoming a mare to entice Svadilfari, a giant's stallion (*Edda*), and in the Veda when goddess Saraṇyū (note the cognation with Gk *erinūs*) became a mare but her consort, the Sungod, found her, mounted her as a stallion and from their union were born the two Aśvins (*RV* 10.17.1-2; *Bṛhaddevatā* 6.162). Yet, although the legend was preserved orally by the priests in Arcadia, Homer and Hesiod knew nothing about it!

We can say with certitude that Herodotos is often totally unreliable and this is one such instance. The Egyptians had no doctrine of reincarnation; they mummified the corpses of noblemen and held that their souls rose into heaven joining Osiris or Ra in his sky-boat. In fact, no Near-eastern culture had reincarnation at this period.

It would be far more reasonable to accept that the Greeks brought the idea of *metempsuchosis*(=reincarnation) or *palingenesia* (again-birth) together with the Erinus legend, the memory of Orpheus and many other elements from the PIE culture, rather than assume that these were borrowed from Near-eastern cultures that did not have them anyway.

But, and this is a regrettable fact, many otherwise excellent hellenists do not wish to consider the PIE ancestry of the Greeks, despite the accumulation of enormous evidence for this. Why? ... One can only assume reasons discussed below, in §8.

M.L. West published his *Indo-European Poetry and Myth* in 2007. He forms an exception to the general state of hellenic studies. But even he fails to any see similarities between Orpheus and the Ṛbhus (p 297).

5. The issues regarding hellenist scholarship, the PIE heritage and the Near Eastern elements of the archaic Greek culture, are discussed in greater detail and in relation to the Vedic culture in ch 7 in this volume, "Archaic Greece and the Veda".

All chapters consist of papers read at Conferences and/or published in Journals or Books together with other studies. However, no paper herein deals with the AIT as such, since this was examined extensively in many earlier articles and talks and in my *Indo-Aryan Origins and other Vedic Issues* (2009). But as now more material has surfaced showing plainly the incredible hollowness of this Theory, I advert to it summarily.

Today a myth is perpetuated that this Aryan Immigration Theory is based on linguistic considerations. Indoeuropeanists and sanskritists in Western academia declare that all other kinds of evidence (i.e. anthropological, archaeological, genetic, literary and the like) should be accommodated within the linguistic frame (which they erroneously established) and made to conform to it.

This is a most astonishing assertion of linguistic arrogance. Let me at once state that here I am referring to comparativists and indologists, adherents of the AIT only. Many linguists do not in the least agree on this with the antics of Western indoeuropeanists and sanskritists. The readers can find a good example of dissenting linguists in S.P. Harrison (2003) in ch. 5 "Indo-European Isoglosses..." (§6).

Just before Harrison, they will find two statements from adherents of the AIT exhibiting ignorance, arrogance and superciliousness. I cite here only one of them by a very eminent comparativist/indoeuropeanist/sanskritist:

> "At some time in the second millennium BC a band or bands of speakers of an Indo-European language, later to be called Sanskrit, entered India over the north west passes. This is our *linguistic doctrine* which has been held now for more than a century and a half. There seems to be no reason to distrust the *arguments* for it, in spite of the traditional Hindu ignorance of any such invasion" (M.B. Emeneau 1954: emphasis added).

However, it is Emeneau himself who suffers from ignorance, not the Hindu tradition. For only 12 years later, in 1966, an article by the eminent archaeologist George Dale in the *Scientific American* showed beyond any doubt that there had been no invasion, no bloodshed, no conquest, no violence. Note, too, that Emeneau talks of a doctrine and arguments, not of data, evidence(s) and facts. Now, whereas historians like A.L. Basham accepted it readily (1975), it took Western and many Indian sanskritists 30 years to accept this fact and change the theory into one of peaceful immigration.

6. In Ch. 5, in §8, I show that far from being a linguistic matter, the AIT started as a sociological speculation in the 18th century of our Era, and the invaders into India were thought to be Egyptian or Mesopotamian, because these two early civilizations had a powerful priesthood, strong armies and a history of invasions and conquests.[1] The savants of that period wanted to explain the social caste-system of priests, warriors, producers and servants and the intermediate

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[1] Some scholars like Langlois, Elphinstone and others wrote against this theory of invasion and conquest accepting the fact that the caste system was indigenous like similar systems in Europe (aristocracy, priesthood, producers and slaves or serfs). They were ignored. The many wanted conquest!

gradations found so institutionalized in India. So they hit on the notion of an invasion from those countries. The invaders formed the three upper strata of aristocracy, priesthood and producers, while the natives became the servile class. The Theory acquired its Aryan mantle thanks to Max Müller in the middle of the 19th century.

The linguistic aspect came later and was a product, not the cause, of the Invasion Theory. The details are buried deep in a past that is now forgotten and not at all mentioned in the modern myth of the AIT. This myth gives the now well-established mainstream chronology for the Old Indic literature and on this basis was erected the entire IE linguistic edifice. But hardly anyone knows that this chronology was established on two fictions.

All modern texts on Sanskrit and ancient Indian literature (e.g. Burrow 1973:43) give in full, or refer to, the chronological scheme set out by Max Müller in his *History of Ancient Sanskrit Literature* (1859). What they don't say is how this pioneer sanskritist arrived at this.

The scheme was based on a ghost story in *Kathāsaritsagara* (composed c 1100 CE!) which mentions a certain Kātyāyana. This person was identified by Müller with the sūtra-writer Kātyāyana, placed in the 3rd century (or c 200) BCE. Thus, working from that date as his basis, he set up the following chronological scheme:

> *chandas* (=RV) c 1200-1000; *mantras* (Atharva, Yajus) c 1000-800;
>
> *brāhmaṇas, upaniṣads* c800-600; *sūtras* etc down to 200 BCE.

Another factor entering those calculations was the world chronology which was established by the Irish bishop Ussher and was based on the lives of the patriarchs in the *Old Testament*. This Book was thought to have been revealed by God to Jewish prophets; Hebrew History was regarded by Christians as the most ancient, basic and reliable one. According to Ussher's calculations the world was

created in 4004 BCE! So all pre-Christian events had to fit within that span. (Charles Lyell, initially lawyer and then geologist, had published his *Principles of Geology* by 1833 and his *Elements of Geology* by 1838, showing that our planet had existed for millions of years, but these had not gained currency, especially among devout Christians, until much later.)

This, then, is the basis for the mainstream chronology of ancient Indian literature and the AIT. It is not based on linguistic evidence as is generally and vaguely but vociferously claimed but on a ghost story composed 2500 years after the alleged Aryan invasion (which initially was Egyptian and Mesopotamian) and on a Christian ecclesiastic myth: in other words, on two fictions! [2]

The linguistic and all other details connected with this subject were worked out gradually in the course of the subsequent decades to come into harmony with this ghost inspired chronological skeleton. What is more, the whole IE linguistic superstructure with its comparisons, its "laws" of phonetic change and its conjectural reconstructions, always and wholly unverifiable, was built upon these fictions!

7. This chronology came under criticism at that time (by Goldstrucker, Whitney, Winternitz and others) and even Müller admitted later that nobody could determine the dates of the Rigvedic hymns which could be from 1500, 2000 or even 5000 BCE. But his earlier scheme stuck and is being taught today in all Western Universities and most Indian ones.

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[2]   For a full exposition of all these aspects the interested readers could consult my paper "The Collapse of the AIT and Prevalence of Indigenism" which can be downloaded from http://www.omilosmeleton.gr/en/indology_en.asp. This is being published by the National Mission for Manuscripts, IGNCA, New Delhi, in the series Tattvabodha Lectures.

However, all archaeologists today, experts in the area of ancient Saptasindhu (Allchin, Kenoyer, Possehl, Shaffer and many others), emphasize the unbroken continuity of the native culture from c 7000 to 600 BCE, when the Persians began to invade the region. American specialist J.M. Kenoyer wrote: "[T]here is no archaeological or biological evidence for invasions or mass migrations into the Indus Valley between the end of the Harappan phase, about 1900 BCE and the beginning of the Early Historical Period around 600 BCE" (1998:174). Even D. Agrawal, an avowed non-indigenist Indian, admits that there is no evidence of an entry and calls the IAs (=Indoaryans) "elusive" (2003:129-135). Thus all archaeologists agree that there is no evidence of any invasion, intrusion or immigration.

Genetics also has in the 2000 decade established beyond any doubt the fact that genes flowed into Europe from N-W India (Gujarat, Rajasthan, Sindh): these are the R 1a1a and the M458 and they travelled northwestward before 8000 years ago (see Underhill 2010).

8. The AIT persists. Apart from Müller's fictional basis which gained acceptance, scholars have pointed out some more factors that fed the persistence.

Lord Colin Renfrew, archaeologist turned linguist, wrote of the AIT: "this comes rather from a *historical assumption* about the "coming" of the Indo-Europeans" (1989:182, my emphasis). And Edmund Leach, Provost of King's College (Cam. UK) wrote: "Because of their commitment to a unilateral segmented history of language development that needed to be mapped onto the ground, the philologists took it for granted that proto-Indo-Iranian was a language that originated outside India or Iran... From this we derived the myth of the "Aryan invasion". Leach went further to comment that after the discovery of the Harappan culture in the 1920's, "Indo-European scholars should have scrapped

all their historical reconstructions and start again from scratch. But this is not what happened. Vested interests and academic posts were involved" (1990: 227-245).[3]

Renfrew refers to common, understandable and perhaps forgivable motives and mechanisms found in academic work. Leach is more severe in describing (and condemning) the motives of self-interest. Academics may protest at Leach's accusation, but I doubt that anyone who cares to examine his/her motives with any objectivity will dismiss this totally. Self-interest and dishonesty, often quite deliberate, are hardly uncommon. We all want posts and fame and the remuneration and the side perks that accompany them. And we all know very well the jealousies, wrangles, back-biting and back-knifing that go on in academia and often have to do not with scholarship itself but with posts and remuneration.

I would add another motive — laziness. Again, we often avoid making extra efforts to get to know past or other studies which seem unrelated to our specialized field or too remote and superseded by recent ones. Who now would, given the enormous amount of modern publications on Indic protohistory, make time to read the voluminous works of the French and English writers of mid-eighteenth and early nineteenth centuries — father Catron, Wilks, Campbell, Ellis, Elphinstone, Langles, Remusat and others who laid the foundations for (or opposed) the AIT?....

Yet unless one has consulted them, one will not have grasped the very simple truth that the alleged immigration into ancient Saptasindhu from Iran has nothing to do with linguistics but is a mere transformation of an invasion of Aryans which in its turn is a transformation of an earlier

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[3] More details on these issues are given in chapter 5 on the Isoglosses, §18 and conclusion III; also in the paper mentioned in the preceding n2.

theory of Egyptian or Mesopotamian invasion (§6 above) put forth by the scholars of c. 1750-1800 because they wanted an explanation for the complex rigid caste system found in India. The fact that similar sociological systems had existed in Europe since the beginnings of recorded history did not help at all. As was said above, in §7, several scholars wrote against this Theory — some even in the beginning of the 19th century. Moreover, despite the many institutionalized gradations within the different castes, the Indian system did not have the horrid institution of slavery, which in America persisted until the bloody Civil War (1861-65) and in some European colonies until later.

And, at the same time, we observe the enormous habit of pedantry by which an academic writes 50 pages with an incredible abundance of useless information when, perhaps, only five or even less pages would do.

We could add other peculiar "prejudices" which result in severe short-sightedness. But enough said. We can leave the AIT and aspects of our psychology.

9. All the papers were written or revised and published in the decade 2003-2013. Almost all have brief abstracts or introductions delineating the discussion and conclusion. But a few words here for each one would be useful.

The first study "Sanskrit and proto-Indo-European" (published in *Indian Linguistics*, pp 75-100, vol 65, 2004) examines several aspects of Old Indic and argues that on this evidence, the rationale of IE comparative linguistics is wrong and needs thorough reconsideration. One such aspect is the stem for man (S *nṛ/naṛ*, GK *anēr*, alleged PIE* *∂2ner* etc). A second one is **the ablaut (or *apophonie*) system, which is formed in a full and logical form only in Sanskrit —** despite the thousands of pages printed about other, mainly Greek, schemes. Yet another one is the family of retroflex

sounds (*mūrdhanya* in Sanskrit:*[r̥/ṭ/ṭha/ḍa/ḍha/ṇa/ra]*).
And so on.[4]

The same theme but from an entirely different angle is promoted in **the second study,** "Coherence and Preservation in Sanskrit" (published in *Kumar* 2009, 108-184, but revised since). Herein are examined more than 400 IE lexical items (nouns, verbs etc) occurring in the IE branches and denoting fairly common and as far as possible invariable things, qualities and activities like arm and foot, anger and love, father and mother, bowl and barley/grain, to breathe and to fly and so on. This study shows that Sanskrit lacks 53, some of which may well have not been PIE, Germanic lacks 145, Greek 149, Baltic 185, Latin 207, Celtic 210 and Slavic 215. Thus Sanskrit preserves a much larger stock whereas Greek, with its early and voluminous literature does not surpass Germanic, and Latin, with an almost equally early and rich literature, lags behind Germanic and Baltic. Another and perhaps more important aspect is that while many words appear in Germanic, Greek, Latin etc, only as isolated lexemes without a family of cognates (e.g. 'daughter'), in Sanskrit many such words have root-nouns, adjectives and verbal forms (§26ff). Sanskrit has organic coherence. Both facts indicate that Sanskrit is by far the most archaic branch and most faithful to PIE.

The third study, "Rigvedic All-comprehensiveness" reinforces the conclusion that Sanskrit is the most archaic of the IE branches and closest to PIE. In the second chapter are examined the lexical items. Here, in the third, are examined grammatical and poetical aspects and in every case the Vedic language and poetry are seen to contain everything found in one or two of the other branches. For instance, the

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[4]   Even as this was going to the press, a friend drew my attention to a paper on the Internet by G. Benedetti, which states similar ideas: http://new-indology.blogspot.de/2013/07/indo-european-linguistics-indo-iranian.html

Periphrastic Perfect, which is found in Hittite but not in ancient Greek or Latin (in both it appears as a later innovation), is also present in Vedic. Then, Greek poetry has strict metre but little or no alitteration whereas Germanic poetry has as one of its basic elements alitteration but not strict metre: both of these are present in the hymns of the *Ṛgveda*.

The fourth study, "Vedic and Avesta" is very technical and shows that contrary to all mainstream belief, Vedic is far older than Avestan. (This paper was first published in *Vedic Venues* Vol 1, pp 183-229, 2012.) It shows also that it is the Iranians who moved out of the wider Saptasindhu to Bactria/Gandhara, then to South-East Iran and then N-Westward.

The fifth study "Indo-European Isoglosses..." was published also in *Vedic Venues* vol 2, 2013). As the title shows, here are examined the numerous IE isoglosses. Some scholars used them selectively in support of the mainstream view of the AIT. However, when all isoglosses are put under the microscope, they are seen to support the indigenist position. The isoglosses are accommodated in their totality and diversity only if as the common urheimat is postulated *an* area in Bactria and the larger Saptasindhu, in the maps provided in Ch4, §17 and ch5, §18.

The sixth study, with its "Language: the Cyclicity Theory and Sanskrit *dhātus*", is not directly concerned with IE matters. It was first written in 2008 for the Annual Conference of the Linguistic Society of India and then published in a revised form in 2013 in *Quaderni di Semantica* vol 34 (pp 51-72). There are various theories about the nature, the beginnings and the development of language(s). I quote here L. Bloomfield: "Language was an invention of ancient heroes, or else the product of a mystical Spirit of the Folk. It began in man's attempts to initiate noises (the 'bow-wow' theory), or in violent outcries and explanations (the 'pooh-pooh' theory)" (1935:6). There

have been many refinements and expansions of these theories with the passing of years. One strange view, appearing recently and echoing some scholars of the 19th century, is that Language "evolves" in a (neo-)Darwinian manner: hence the striking title of one such study — N. Ritt's *Selfish Sounds and Linguistics: A Darwinian Approach to Language.* Such an approach presupposes that Language is an autonomous living organism — something which most emphatically it is not. No language or its sounds ever evolved of themselves! English did not develop of itself to its present state from Anglo-Saxon etc but was helped on its way by the millions who spoke (and wrote) it and particularly by great men of literature like Chaucer in the 14th and Shakespeare in the 16th centuries. A different theory claims that there is a cyclic pattern whereby languages move from the isolating typology (where every meaningful lexeme is a distinct word, as in Classical Chinese) to agglutinative (where long compounds contain several separable meaningful elements, as in Hungarian) and then towards a fusional state (where words contain basic stems and other elements marking gender, number and case in nouns and person, number, mood, tense, activity etc in verbs, as in Greek, Latin, Sanskrit, Modern Lithuanian, Russian etc). This appears to be true in some cases but does not really explain how language starts. However, the very real existence of *dhātus*, i.e. basic linguistic seedforms or roots, that constitute nine classes and develop into nouns and verbs according to regular processes, belies this cyclic theory; for language-sounds or lexemes **cannot evolve** from a chaotic condition or multiplicity to *dhātus*. The highly complex situation in Sanskrit suggests a sudden "explosion" (Dixon 1992, Bickerton 1990, Chomsky 1986) and the presence of very great intelligence at the very outset — something like the mythical way goddess Athena sprang out of Zeus temple in full panoply.

The seventh study "Archaic Greece and the Veda" was first published in the *Annals of the Bhandarkar Oriental Research Institute* (Poona) and has since been revised considerably. This paper examines affinities between the archaic Greek culture and the Veda. Several elements, ideas and motifs that hellenists consider to be loans from the Near East are, through comparison, shown to be very similar elements, ideas and motifs, in the Vedic texts and therefore *i*nherited forms from the PIE culture. For example, I mentioned earlier (§4 above) that reincarnation is thought by many scholars (thanks to Herodotos 2.123) to have been brought into Greece from Egypt, or some other Near-eastern culture. However, as this is not found in any N-E culture yet is found both in the Vedic texts and among the Celts, we must accept it as a PIE element that was preserved in the Celtic, Greek and Vedic branches but not elsewhere. In another case, W. Burkert links with Mesopotamian parallels, the incidence of demons, guilt-spirits and ghouls and the like in early Greek texts but all such phenomena are found in the Veda and can, therefore, taken to be inherited PIE ideas. (The details are in section (V) 'Magic and Purification' of this chapter 7.) One blessed side-effect of this study is the emergence of a great number of Greek-Vedic affinities.

The eighth study is a paper published here for the first time. It examines an idea, current in Anthropology and also certain historical and religious studies, that the beginnings of religion are to be found in shamanist practices and the ingestion of drugs that bring about altered, higher states of consciousness. With the help of the *Ṛgveda*, which is a document much much older than all the shamanist evidences collected by anthropologists since, say, 1850, or allegedly found in ancient texts (e.g. the tales about Orpheus), I argue that higher states of consciousness are attained by adherence to ethical principles and simple practices of meditation, reflexion, focusing of attention and the like. I argue further

that, on the contrary, shamanist phenomena with intensive dancing or drug-ingestion are later, devolved or degenerate practices to which people resorted after they had lost the ability and knowledge of how to attain higher states through ethical practices, attention etc.

The ninth study "Tad-ekam: not female not male" deals with the claim that the most ancient supreme deity was female, the Mother-goddess, and its rival that it was male, the Sky-father or Sun-engenderer, and the like. Some scholars like M. Gimbutas and R Graves opt for the female Earth goddess adducing evidence from Old Europe and Mediterranean and Near Eastern cultures. However there is ample evidence of a male supreme deity from a very old period even in the Near East and certainly in iconic representation in prehistoric India and elsewhere. At the same time, there is evidence of a neuter, non-female, non-male, supreme deity in cultures like that of the Jōmon in Japan in the 11th millennium BCE, while several hymns of the *Ṛgveda* declare that all deities are expressions of a Primal Power, itself unmanifest and neither female nor male — *tad ekam* 'That One'.

10. Just as until c1860 (pre-)history had to be compressed within the 4004 BCE limit set by Ussher (§6, above), so in the 20th century a new much earlier limit was promulgated by paleontologists who, according to the discoveries of skulls and skeletal bones, thought that anatomically modern man *homo sapiens sapiens* appeared on the planet only 40.000 ago, after the Neanderthal type. So again human prehistory had to be contained within this span.

However, in the latter part of the 20th century, as more cranioskeletal fragments were discovered, the limit was pushed back to 80.000, 120.000 and now 200.000 years B(efore) P(resent), when *home sapiens sapiens* demonstrably first emerged.

Surprisingly, with but few exceptions, mainstream savants continue to favour recent dates. This preference is largely conditioned by their view of civilization/culture, which is generally based on material artifacts, since for those distant pre-writing periods these are the only criteria.

11. Another factor that caused and continues to cause havoc in our thinking is the notion of (neo-)Darwinian evolution.

Professional and amateur anthropologists explored and studied communities which lived in jungles, deserts, mountains and other areas difficult of access with customs and traditions quite different from those of Western Christian societies. As the latter were and are, again on the criteria of material artifacts and technology, thought to be more advanced and "civilized", the former were baptized backward and "primitive". These primitive communities were thought to be or to represent the ancient early stages of the so-called advanced societies. As the Darwinian evolution became quite fashionable among biologists, other scientists, academics and writers in general, applied it to all kinds of phenomena, even inorganic, material and man-made ones, like the evolution of drama (comedy/tragedy), of language (above, §9, 6th ch.), the evolution of the telescope or, more recently, the submarine!

Various institutions and society itself were thought to develop or "evolve". The process had actually started long before Darwin with anthropologists and, even earlier, with Aristotle's *Politics* where, in Books 1 and 2, he attempted among other things to justify slavery, to indicate the specialization into crafts and trades and delineate the rise of *ethnos* 'tribe' and *polis* 'city'. (Plato's treatment of ideal or primitive society in his *Republic* 368E,ff, is quite different in that specialisation is indeed indicated but, moreover, the members of the community are respectful towards one another, towards nature and towards the gods.)

Now, undoubtedly evolution does·proceed in many biological phenomena in the dictionary sense of the word, i.e. in an orderly and progressive development governed by exact but not in every case known laws. But the almost indiscriminate use of the concept with inorganic man-made institutions and things has led to much misunderstanding. This becomes evident by considering what is also excluded by the idea "evolution". The concept excludes the presence of intelligence and planning: it designates an independent and mechanical process moving always in the same progressive direction. It excludes external factors or accidents that may instantly change the initial course and even reverse it. Thus, and much more important, the concept has no antithesis — decay, degeneration, devolution! [5]

But such a constant advancement in one and the same direction, that is progressive transformation into a more complex or higher form, is not really a scientific concept. Science is based on precise observation and experimentation that disproves or validates assumptions and theories. The concept of evolution presented above is not really observable either in nature or in the laboratory. On the contrary, it is observable that decay, degeneration, decline, decadence and dissolution occur all the time and are not "evolution" but forms of "devolution", the opposite of evolution, observable everywhere. Every type of organic growth at some point stops and decay/degeneration/dissolution sets in. It happens with all living organisms — plants, animals, humans. A man's vigour may go on

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[5] Many biologists and others have expressed doubts about the (neo-) Darwinian theory of evolution and continue to do so. I append a small selection of writers. First, Darwin himself who in his second classic *The Descent of Man* admits that he has exaggerated the importance of natural selection in his desire "to overthrow the dogma of separate creations" as in G. Himmelfarb (1959:302)! Grasse 1973; Denton 1985; Behe 1996, 2004, 2008; Demski & Ruse 2004; Meyer 2009; Wells 2011.

increasing until the age of 30 or 40 but decline begins afterwards and by 80 or 90 decay or degeneration has well set in; sometimes, due to accidents, an unhealthy mode of living, or some other factor(s), this may take over even at 30.

Thus, strangely, anthropologists do not normally consider that some of the "primitive" communities, discovered and studied from the end of the 19th century onwards, may be examples of devolution or decadence of ancient and once vigorous societies. That this may have been so is confirmed by the fact that in many of these cases we observe no further development at all but a gradual absorption by other more vigorous societies and/or extinction. In several cases, these communities retain memories of a previous better state than the present one, a sort of past Golden Age.

12. Because of the issues discussed above in §§10-11, many wrong notions and theories have been established in mainstream currency regarding the rise and development of language, literature, religion, social relations and the like. A thorough reading of the *RV* dispels such notions and demands new approaches. Whether this will take place is another matter. Inertia is as difficult to displace as wrong-thinking.

One new approach necessary for indological studies is the dismissal of the AIT in its current forms and the adoption of indigenism. This goes hand in hand with a new date for *RV*. This stupendous literary monument is not of 1500-1000 BCE. The bulk of it should be assigned to the fourth millennium. The Harappan or Indus Valley Civilisation is a post-rigvedic material expression of the culture found in the Yajurveda and the Brāhmaṇas. This was pointed out long ago by by non-indigenist indologists like the Allchins(1997, 1982), Parpola (1988) and so on.

This at once necessitates a complete revision of notions about the PIE homeland. As some papers (especially 4 and 5)

show, *the urheimat was in the region of Bactria* and wider Saptasindhu. This was pointed out by Johanna Nichols (1997-8) on purely comparative linguistic grounds. It was also proposed by A. Pictet (1859-63) back in the 19th century. The date of the first dispersal of the branches must be pushed much further back, perhaps in the 6th or the 8th millennium and even earlier.

At the same time a revision of all notions about the PIE language will be necessitated. Again, almost all papers show that Sanskrit is much closer to PIE than any other branch. So the "democratic" approach, which has been followed hitherto and regards almost all major branches of equal value and importance laying special emphasis on Hittite as older, must be abandoned. In fact, all reconstructions must be scrapped and a new start be made with the Vedic language as the basis. Here, more than in any other area of human study, will appear inertia in all its force!

Theories about language more generally will also need to be re-examined drastically and research should proceed having as starting point the Sanskrit dhātu and its development into verbal forms, nouns, adjectives etc, i.e. in primary and secondary derivatives (as described in ch 6). The PIE language from which Sanskrit descended must have been one of unimaginable power and subtlety, and I doubt whether many, if any, of us today could use it.

The *RV* also upsets current notions about the beginnings of religion. As chapters 8 and 9 indicate, religion did not start with crude animism or a Sky-father-god or a Mother-earth-goddess. The rigvedic sages knew that all manifestations, all forms of divine power, are expressions of a Supreme Being, not male or female, and Itself remaining transcendental and immanent. From this developed, or to be more precise, descended or devolved other forms of religion, ritual, myth and superstition.

Finally, we come to a consideration of man himself as a species. The *RV* suggests, as does in part the book of *Genesis*

in the Judaic *Old Testament* (and also as do some other traditions) that man was created perfect — except for the limitations of his material embodiment. He may well have arisen after a long process of evolution through many animal forms, but *homo sapiens sapiens* sprang into existence fully equipped with knowledge of himself and of the cosmos in complete harmony if not unity with the cosmos. For various reasons this beatific unity was, in course of time, lost and at that period man conceived of language, law and religion as instruments that would aid his return to that primal unity. These concepts, which now appear in so many fragmented forms, must have been complete, and perfect, right at the start.

1. Sanskrit and Proto-Indo-European

1. In this paper I argue that on the evidence of Sanskrit much of the rationale of indoeuropean comparative linguists may well be wrong and may need radical reconsideration: the three-grade ablaut (=vowel gradation) in Sanskrit, for example, seems much more convincing than the five-grade one proposed by indoeuropeanists; also the retroflex/cerebral consonants in Sanskrit may well have been original in Proto-Indo-European but lost in the other branches. I should clarify that with "Sanskrit" I mean Vedic as well and that although I consider this language (especially that of the *Ṛgveda*) to be closer to Proto-Indo-European than any other branch, I do not regard Vedic as the IE mother-tongue. In addition, the *RV* should now be placed firmly within the fourth millennium BC (Levitt 2003; Kazanas 2003, 1999). Edmund Leach wrote that after the discovery of the Indus-Sarasvatī civilization "Indo-European scholars should have scrapped all their historical reconstructions and started again from scratch. But this is not what happened. Vested interests and academic posts were involved" (1990). Although IE comparative philology has promoted considerably our understanding of the *IE* family of languages and although Leach's remarks may sound too harsh, I agree with his main point that the "reconstructions" should be scrapped and a new beginning be made – if this pursuit is thought to be necessary. In this article I indicate some points where the "scrapping" can begin and at the same time give evidence for the much greater antiquity of Sanskrit.

2. In his *The American Heritage Dictionary of Indo-European Roots* C. Watkins gives three PIE roots for 'man'

man, ner and *wĭ-ro* (p 51, 58, 101: all these without asterisk); he points out the older form of ner is ***∂₂ner-** and its basic meaning is 'vigorous, vital, strong'. In all his derivations he cites Pokorny (1959), whose spelling and some conclusions for PIE reconstructions are now superseded, but he obviously has consulted many other studies although he does not cite more recent publications, like those of S.E. Mann (1984-7) or H. Rix (1998).

Let us start with *(∂₂-)ner asking ourselves if this is indeed the original form. To begin with, the asterisk indicates clearly that this word is a conjectural reconstruction and does not exist in any extant early language; nor is there any means at all of verifying the conjecture. The incautious or uninformed reader will perhaps (in going through Watkins' *Dictionary...*) think that all those roots printed without an asterisk are genuine words. They are not: they are conjectural reconstructions. T. Burrow, the eminent sanskritist, gave a warning more than three decades ago: "....in the case of Indo-European it is certain that there was no such unitary language which can be reached by means of comparison... the Indo-European that we can reach by this means was already deeply split up into a series of varying dialects" (1973: 11). Although some comparativists feel arrogantly confident about their conjectural reconstructions, others do express candidly the uncertainty involved. Thus O. Szemerényi, an eminent comparativist, admits that the reconstructions are used to facilitate comparisons, using one word instead of many IE variants, and cites Hermann's statement that "complete forms (e.g.*deiwos [=S *deva-s*]) cannot be reconstructed at all, only single sounds, and even these are meant as approximation only" (1996: 33, my square brackets). Nonetheless, he makes very great efforts to "reconstruct" PIE forms and evinces considerable faith in these reconstructions.

3. The hypothetical stem *(∂₂-)*ner* is found in Phrygian and Greek *a-nar/nĕr-*, Oscan (=Old Italic) *ner-um* and the Roman name *Nero*, in Welsh *ner*, Albanian *njer* and Avestan

nā/nar-. Vedic has the stem *nár-a* and also *nṛ*. Now according to the AIT (=Aryan Invasion/Immigration Theory) the Aryans came to Saptasindhu, 'the land of the 7 rivers', in N-W India and Pakistan, c 1700-1500 bringing their Indoaryan speech, which was a branch of the older Indo-Iranian (a language supposedly spoken by the Indoaryans and Iranians which is not attested anywhere but is only conjecturally "reconstructed" by comparative linguists). According to this, then, the stem *nara* should be very common in the *RV*, which is the oldest extant Indoaryan text, composed c 1200-900 (always accordingto the AIT). Indeed, *nara* is frequent in the *RV* as is also the f *nắrī* 'woman, wife'. But so is *nṛ*, seen clearly in declension: plural 2 *nṝn*, 3 *nṛbhis*, 4-5 *nṛbhyas*, 6 *nṝṇām* and 7 *nṛṣu*.

IE linguists comment profusely on *nara* but hardly ever bother to consider the full declension of *nṛ*. Yet here we find a paradoxical situation. If *nara* is older than *nṛ* (and *nṛ* is an Indoaryan innovation, or whatever else, but, in any case, not earlier than *nara*), we should find in the *RV* more compounds with *nara-* as first member than compounds with *nṛ*. Fortunately, this statistical game is an easy one. There is only one *nara*-compound – *narāśaṃsa* 'men's desire/praise', epithet of Agni. On the other hand, we find numerous compounds of *nṛ+* : *nṛcákṣas-* 'watching men', *nṛjīt* 'conquering men', *nṛtama* 'most manly', *nṛpáti* 'men's lord', *nṛpátnī* 'queen', *nṛbāhú* 'man's arm', *nṛmádana* 'gladdening men', *nṛvāhana* 'conveying men', etc, etc. Here one might argue that the older stem *nara* is falling into desuetude and *nṛ* ascends in frequency. But what we find is that compounds of *nara* increase in post-rigvedic texts: e.g. *nara-kāka* 'crow-like man' *nara-tā/tva* 'manhood', *nara-deva* 'men's god, king', *naranātha* and *narapati* 'king', *narayāṇa* 'mandrawn cart', *narādhi (-pati)* 'king', *narottama* 'best of men', etc. Moreover even the forms *nar-a, narya* 'human, heroic', *nāra* 'human' and *nārī* 'woman' can be seen as primary or secondary derivatives of *nṛ* according to the formation of such

derivatives by the addition of suffixes and the vowel gradation ($r \to ar$ guṇa and $\bar{a}r$ vṛddhi). Consequently, since there are not even traces of *nar-a* in any other formation to suggest its greater antiquity, we must take it that *nṛ* is the oldest form.

4. According to the rigvedic evidence ner could not be the PIE primary form but only a derivative. The alleged *∂_2-*ner*- is based mainly on the Gk *a-nĕr*-. Greek is well-known for its tendency to prefix phonemes not found in the cognates in other IE branches. E.g. the common IE stem for 'horse' (S *aśva*, L *equus*) is in Gk *h-ippo-s*, where the double *-pp-* is explained as substitution for the *v/u* while *p* is often equivalent for S/L *ś/q*; but the initial *h* (a rough breathing) is an addition since this usually corresponds to IE *s* or *v* and no IE cognate for horse has such an initial; in any case, the Mycenaean *iqqo* (much earlier form in Greece) has no *h*. The fact that other IE branches, including Avestan, have *ner/nar* but not *nṛ* proves nothing, since they do not have *ṛ* at all. Szemerényi states that *ṛ* appears in IE branches other than Sanskrit as *ar/ir* etc or *ra/ri* etc (1996: 48-9).

The stems *ner/nar* in the other IE branches and *nṛ* > *nar-* in Vedic are isolated: there are no cognate verbal forms (e.g. **narati* 'be/behave as man') as with S *bhṛ* > *bhár-ati* / *bíbhar-ti*, Av *bara'ti*, Gr *pher-ei* etc 'one bears'. The other branches have no other cognates of any kind, except Greek which has words from the stem *andr-* (e.g. *andr(e)ía* 'manliness, bravery') but they are all from a period much later than Homer or Hesiod (GEL *andr-*) and this suggests innovations, not original cognates. Vedic at least, apart from the words cited earlier, has patronymics with the normal *vṛddhi* form – *nārkalpi, nārṣada, nārāyaṇa* etc. This is the aspect of the organic coherence of a language whereby roots generate primary stems of verbal forms in conjugation or nominal forms in declension and also secondary derivatives. In Vedic, more than any other language, this unfolds fairly regularly through ablaut, i.e. the graded change of the vowel

in the root, or in the primary stem, and the addition of affixes and terminations. Thus, as is observable and as the NIGT (=native Indian grammatical tradition) holds, the simple vowel ṛ is transformed into its guṇa grade **ar** and its vṛddhi grade **ār** for primary and secondary derivatives respectively. Note that IEL (=Indo-European Linguistics) does recognise this general process of ablaut and does take it into account but evaluates it differently and does not give to the organic coherence of a language the importance it deserves. (We shall return to this.)

5. Let us now examine the verb 'to bear (=carry, bear children)'. Here too IEL gives as root *bher and regards bhṛ as "zero grade", i.e. a falling off (=derivative or devolute) from the root proper. Different cognates are found in Olr berid, Gth baira, L fer-, Alb bie, Gr pher-, Phr ab-ber-et, Arm ber, Sl bere, Av bar- and Toch A/B pär. Vedic has both bhar- and bhṛ-. Here bhar- is in many words: bhar-a 'bearing, what-is-borne', bhar-aṇa 'the act of bearing', bhar-atā 'to be supported' (epithet for Agni), bhar-tṛ 'bearer, husband, lord' etc; also bhāra 'load', bhārata 'sprung from Bharata' (also for Agni), etc. The stem bhar- is common in verbal forms also: bi-bhar-ti, bhár-ati 'one bears', etc. But we find also bhṛt in compounds like iṣu-bhṛt 'arrow-bearing', bhṛta 'borne', bhṛ-ti 'maintenance', etc. All these are regular formations and many parallels can be cited from other dhātus like kṛ, dhṛ, vṛ, etc. There are also verbal forms: bibhṛtás, bibhṛhí, ja-bhṛṣé, jar-bhṛtás, etc.

Unlike nṛ which has no verbal forms, bhṛ is a full dhātu according to the NIGT and is conjugated as a verb also. As such, it is conjugated in two modes, as class I (thematic) and as class III (or reduplicating, where the reduplication itself need not detain us). The class I bhárati 'bears' is quite regular taking the affix -a- in the stem before the terminations (hence 'theme' and 'thematic': bhár-a-ti); since the stem or theme remains bhár-a unchanged before the terminations, it has not much to reveal. Again many parallels can be cited, like járati, dhárati etc. The class III formations reveal the important

aspect of 'strong' and 'weak' forms or persons. Strong are the three persons in the singular indicative and imperative of the present (and some others) and weak are the three in the dual and plural ind and impv pres (and others). The strong persons have the stem *bhar-* and the weak *bhṛ-* : thus *bí-bhar-ti* (ind) 'bears' (strong) and *bi-bhṛ-tám* (impv) 'do bear, you two' (weak). There are not many verbs in class III but √*sr* 'flowing' provides parallels: *sí-sar-ti* (ind) 'flows' (strong) and *si-sṛ-tám* (impv) 'do flow, you two' (weak). As is observable and as the NIGT holds, the strong stem has the guṇa form *ar* of the radical vowel while the weak one has the simple vowel unchanged (or zero-grade in IEL, which with some verbs shows the loss of the radical vowel altogether).[1] After discussing accent and strong and weak stems in the verb (S √*i* > *eti*, Gk doric *eiti*, L *it* 'goes'), Szemerényi, indeed, states that the "OInd [=Sanskrit] paradigm continues the Indo-European almost without change" (p 315). We can extend this judgement to many other aspects of these languages, e.g. *bhṛ*. Consequently, here too, as with *nṛ*, the stem *bhṛ-* is in fact the original root-form √*bhṛ* and *bhā̆r*-derivative.

6. Yet Szemerényi, as almost the entire IEL, regards the strong or guṇa grade as "the basic form". And because this issue is crucial I quote him in full:

> "With regard to the ablaut alternations, it is in the first place clear that loss of the basic vowel is connected with the position of the accent. Forms like Skt. *ás-mi* 'I am': *s-ánti* 'they are' from IE **és-mi*: **s-énti* (cf. Dor. ἠμί :ἐντί, Gth *im*: *ind*, OCS *esmĭ*: *sǫtŭ*) can only be

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[1] The term zero or nil grade seems more fitting for this syncopation or loss of vowel (which the NIGT regards as *lopa*, temporary 'disappearance' *adarśana*: P I, 1, 60): e.g. √*dā* 'giving' > *dá-dā-ti* 'one gives' (strong), da-t-tam (impv) 'do give, you two' (weak syncopated and sandhi of *d* > *t* before -*t*). The radical *ā*, being already strong (vṛddhi grade of *a*), remains in the strong persons but disappears in the weak ones leaving only *da-d-* (*dad-mas* 'we give', etc). A full discussion of this aspect and of accent, which early on was musical, would take us too far away.

understood on the assumption that the root *es-lost e and became s in the plural because of the shift of the accent from the root to the ending (cf. also Skt. 1st pl. s-más, 2nd pl. s-thá from IE *s-mês, *s-t(h)é; in any case, one can only reach s- from es- and not vice versa.

This is important, because the Indian grammarians in their theory of vowel gradation started from the zero grade as the basic form and accounted for the other two grades as arising from it by successive additions of a: thus basic grade diš- 'show', guṇa ('secondary quality') déš- < *d-a-iš-, and vṛddhi ('increase') daiš- < *d-a-a-iš-. In fact, the only possible basic form is the full grade, the guṇa-grade of the Indians, even if in isolated cases a zero grade can acquire a new full grade formed on the analogy of existing alternations.

Note here (a) The importation of conjectural forms marked with asterisk * (even S *da-iš = diš with guṇa > deš-). (b) It is probably true that the initial a- was lost eventually in the weak persons because it remained unaccented (e.g. s-vás, s-más etc) but there is a trace of it in 2nd sing impv edhí (ultimately < *a-s-hí ?). (c) More important, Szemerényi should not have used as an example these forms, since they are different from the examples of √diš->deš- (and the examples we have examined so far) and, above all, the Indian grammarians gave not s as the basic form or root for this verb 'to be' but √as. (d) He calls the guṇa grade "full grade" whereas for the NIGT the guṇa grade is middle and the "full" is vṛddhi.[2]

7. The root bhṛ must also have been PIE like nṛ. Indoeuropeanists class ṛ as a "syllabic liquid" and accept it (as well as ḷ and their long forms) as PIE (Szemerényi, p 48-9; Baldi 1982: 16). However, they rarely cite a root with ṛ (except *kṛd- 'heart). They prefer to cite the conjectural stems *ner-,

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[2] Here I may be unfair to Szemerényi as I have consulted only his publication in the English translation but not the German original, where he may be using a different adjective. However, "full" in this context could hardly be other than German voll.

*bher- , *kerd (=heart), *dher- (= S √dhṛ > dhar-) and so on, perhaps because the ṛ is not attested as a phoneme (in contrast to the common r) in any early IE language other than Sanskrit (not even in Avestan, its closest relative, or in the allegedly earlier Hittite). On the other hand, the NIGT treats ṝ generally like the other simple vowels ă, ĭ, ŭ. Even Western grammars of Sanskrit present ṛ as the vowel of the retroflex or cerebral (=mūrdhanya) sequence of phonemes and ḷ as that of the dental family (dantya). Now, whether we call ṛ "vowel" or "syllabic liquid", the fact remains that in Sanskrit it behaves generally like a simple vowel and appears in dhātus, in nominal and verbal stems and even in a suffix like -tṛ which generates numerous nouns of agency or relationship: as-tṛ 'thrower', joṣṭṛ 'cherisher', dhātṛ 'establisher', bhartṛ 'supporter, husband', mātṛ 'mother', etc.

8. Unlike ṛ which is very common, ḷ is found only in the few derivatives of √kḷp 'preparing'. We find ḷ in weak verbal forms cā-kḷp-úr 'they have prepared', 'á-cī-kḷp-at 'one prepared' (redupl aor), etc, the ppp kḷp-ta 'prepared', often adjectival, and in the f noun kḷpti 'preparation': both the ppp (-k-ta in NIGT) and the abstract feminines with the suffix -ti are formed without ablaut, though some other changes in the root may occur; in some cases we find a weakening of the vowel as in √sth-ā > sthita, sthiti. This phoneme is even rarer than the long ṝ, which appears in some dhātus (kṝ, tṝ, pṝ, etc)[3] and in the acc and gen pl of nouns in -tṛ: astṝn 'throwers', pitṝn 'fathers', astṝṇām 'of throwers', pitṝṇām 'of fathers'. In fact the long ṝ of dhātus is not retained even in conjugational forms where we would expect it, i.e. in weak persons: thus from √pṝ 'filling' as class III, we have the regular strong stem pí-par-tu (impv) 'let one fill', but the weak stem is pí-pṛ-tām (impv) 'let the two fill' and as class IX √pṝ has only weak grade pṛ-ṇātu 'let

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[3] These are so given in the *Dhātupaṭha* and some Western publications (e.g. *MSD* and Macdonell's *Vedic Grammar for Students*) but other Western books give these dhātus with short r (e.g. Whitney's *Roots, Verbforms...*) or not at all (e.g. Mayrhofer 1956-).

one fill', where the strong person is denoted by both the affix -nā-, and the ending -tu and pr̥-+n̥ītām 'let the two fill', where the weak person is denoted by both the affix -nī- and the ending tām.

Naturally, one wonders why l̥ is so very rare and long l̥̄ appears only in the specific cases mentioned, while long ī̥ does not appear at all. But before we look for a plausible reason, we should examine the important aspect of the nature of vowels and the basic principles of sounding them in practice.

9. We said that r̥ is the vowel of the *mūrdhanya* family and l̥ of the dantya. Similarly a is the vowel of the velar or guttural *kaṇṭhya*, i of the palatal *tālavya* and u of the labial *oṣṭhya* family. The vowels may seem easy to pronounce but this appearance is deceptive. Even the short a requires much attention actually. The sounds that ordinarily, in everyday use, pass for a are in fact many different versions or shades of a, many more than the sounds heard in the English words *sat, shut, Sarah, sofa,* or *shaft* – leaving aside any regional varieties; the variant spelling of *dispatch* and *despatch* shows one of several difficulties regarding i; the difficulties with u are less obvious (but seen in German *buch* 'book', *bücher* 'books').

By definition, any and every vowel *svara* should sound of itself, as it were, riding on the air coming out of the mouth, for as long as the outbreathing lasts and without losing its brightness and specific quality. The a is comparatively simple: we open the mouth keeping the jaws apart and the tongue relaxed and flat, without strain, and let the sound a emerge. In fact, when we experiment, we note that another sound that can arise, when we desire to hear sound, is the hissing "h-h-h" of the out-breath as the air travels through the open mouth; but there is also a slight movement of the back of the tongue constricting the opening. This is probably the basis of the three *ūṣman* 'sibilants', the visarga ḥ and ha (classed as kaṇṭhya). When we desire to hear our breath-sound or to make it 'voiced', the vocal chords vibrate and so arises a, of itself: there is no other movement, except the vibration of the

vocal chords. We can prolong this sound for the duration of the outgoing breath but in order to keep it clear, bright and resonant, we must attend so that there is no movement of jaws, lips or tongue. The process sounds, and is, simple enough, but, surprisingly, as singers know well, it requires practice. From this prolonged sound a_3 अ ३ one can arrive at the short measure, then the long.

I experimented personally for very long periods over the years. I also experimented with many people of both sexes and of various ages: most of them were non-linguists and so totally free of preconceived notions of how phonemes arise.

To obtain prolated (prolonged or protracted: *pluta*) i_3 इ ३ the start is the same as with *a*: jaws and lips apart and tongue flat and relaxed. But now, for *i* the tongue arches upward towards the palate without touching it and the *a* changes, of itself, without any other effort, into *i*; even if one thinks of *a* or any other sound, so long as there is no change in the vocal machinery, there will be इ *i* – but a sound different from and much fuller than the variety of *i* used ordinarily. Then one finds the short and long measures इ ई. Thereafter with a slight change in the position of the arched tongue, the sound इ becomes *e* ए. *This is long* – if it is to retain its pure quality, its clarity and brightness. A short measure of this becomes indeterminate, something between *e* and *a*, which may be denoted by the phonetic symbol [ə].

The u_3 उ ३ is obtained by a similar yet different process. Here the jaws are again apart and the tongue flat but the lips close down without joining. Now the *a* becomes *u*. Again, one finds the short measure and double that gives the long *ū* ऊ. From *u*, the *o* ो ओ is easily obtained.

The phonemes *ai* ऐ and *au* औ are definitely diphthongs. As such they are naturally long.

MacDonell states that *o* and *e* "stand for the original genuine diphthongs *ăi* and *ău*" and gives various explanations in the usual IEL line of thinking, including some cases of

sandhi (pp 4-5). This may be right. But I have strong doubts about it all because in moving from a_3 to i_3 one hears first the sound e just before $\bar{\imath}$ arises and in moving from a_3 to u_3 the sound o arises before u. Thus e and o are natural vowels and not the result of $a+i$ and $a+u$. The sounds have to do with full or restricted opening of the back or the front of the mouth – even though for grammatical or phonetic analysis the (misleading) notation of $a+V$(owel) has been adopted generally.

The vowels r and l are more difficult. While if attention is given, a, i, u can be quite stable in their individual quality and their fluidity, the r and l are difficult to maintain. Theoretically r should emerge out of a when, with the mouth open, the tip of the tongue moves towards the front hard palate, where the corresponding mūrdhanya consonants are produced with contact. In my long and varied experiments, I could not maintain its clarity and brightness; even the short r tended, if the attention wavered, to become a different sound – something like the syllables ri or ru. Theoretically again, l should be obtained with the rise of the tip of the tongue towards the teeth or the end-part of the upper gum: this proved extremely difficult without some contact or without some additional movement of the back of the tongue. Today, it is usually pronounced as lri and is said to correspond to l representing an original r (MacDonell following the RV Prātiśākhya, p. 15). Whatever it was in distant antiquity, today it is a mercurial sound, sometimes bright, sometimes dark.

10. One of the greatest difficulties in these experiments was to persuade people to keep their jaws apart and then move the tongue (or lips) as required. Be it noted that in Modern Greek we have no tālavya sounds nor mūrdhanya, except for the vowels i and e, the semivowel ra and the hybrids -ts-, -dz- and -ks- (though on the islands of Crete and Cyprus a sort of palatal $śa$ is common). People have generally become too lazy and consequently produce all kinds of

variant, imprecise sounds. This would appear to be the cause of sound changes in language. The words *good, water* and *understand*, to take some examples, are spelled alike in all English-speaking countries but each one is pronounced quite differently in different parts of Britain, the USA, Canada, Australia, etc.

11. The difficulty of maintaining clear *r* and *ḷ* was, I think, the reason that these sounds are not so common in Sanskrit and are totally absent in the writing of the other IE languages, when these emerge with literacy in historic times. The long *ḹ* is totally absent even in the *RV*. The long *ṝ*, present in √*pṝ* 'filling' and √*śṝ* 'crushing', does not appear in any of their derivatives. The *Dhātupaṭha* could easily have given them as √*pṛ* and √*śṛ* (i.e. with short *ṛ*), like *kṛ* 'making' or *sṛ* 'flowing'. Since it does not, we must assume that radical long *r* was a reality and of significance, even though derivatives having it (if they ever existed) were not preserved.

The NIGT separates *r* and *ḷ* from *a, i, u*, as is obvious in the *maheśvara-sūtras* (*a-i-u-ṇ* and *ṛ-ḷ-k*), and this seems right. Perhaps their instability, or their different nature at any rate, was recognised. Modern linguists also separate them and call them "syllabic liquids" rather than "vowels" (although they have no "liquidity" in the strict meaning of the word).

12. The vowel gradation or ablaut, which was mentioned earlier in §4 in respect of *r* → *ār*, holds also for *a, i, u* and *ḷ*.[4] Thus *i* → *e* → *ai*, *u* → *o* → au and *ḷ* → *al* → *āl*. As P. Baldi, another indoeuropeanist of note, sums it up: "the *guṇa* form is made by adding an *a* to the simple vowel; the *vṛddhi* form is made by adding *a* to the *guṇa* form" (1983: 56). But this

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[4] With *r*, my experiments showed the obvious. When I sounded the prolonged *r*, if I added *a*, the result was naturally ra. To put the *a* into the *r* I had to obtain *a* first and this meant that the tip of the tongue had to be swiftly lowered back to the flat position, then swiftly again up to the *r* position: this, of course, gave *ar*, and another measure of *a* gave the vṛddhi *ār*. Similarly, a measure of *a* into *ḷ* gave *al* and another one gave *āl*.

"adding" can be misleading; for if we add *a* to *i* we get *i- a-* →
ya. The "adding" is more of an infusion of *a* into *i* (giving *e*)
and then into *e* (giving *ai*). There is nothing theoretical about
this. As we saw in **§9** it is a fairly natural process with
i → *e* → *ai* and *u* → *o* → *au*. What of *a*?

With the simple *a* the situation is different. An additional
input of *a* will simply prolong the short *a* making it long *ā* आ.
In the actual Sanskrit language the short *a* is both radical or
primary grade and guṇa grade in conjugation and declension:
contrast √*cit* 'perceiving' > *cet-ati*, √*cet-as* and √*jan*
'generating' > *jan-ati, jan-as* (*RV* II, 2, 4). This is clear enough
in *Pāṇini*'s sūtra I, 1, 2, *ad-eṅ guṇaḥ* '*a, e* and *o* are guṇa'. But
it may be that the much discussed final sūtra of Pāṇini's
Aṣṭādhyāyī VIII, 4, 68, अ अ refers to this situation suggesting
that short *a* remains short *a* in both the simple radical vowel
and the guṇa grade; or that the radical *a* was originally what is
today termed "schwa", the [æ] as in *an* or *map*, or an
indeterminate short phoneme like the [ə] of *sof-a* – which is
what IEL has opted for. The post-Pāṇinean NIGT talks of
saṃvṛta 'closed' and *vivṛta* 'open' *a*. It is a great pity that
Pāṇini, the great master himself, did not say more.

13. The ablaut is fully accepted by linguists as a regular
phenomenon in the "reconstructed" PIE language. Unlike the
three grades of Sanskrit, the PIE is said to have five and these
appear as changes of quality, that is changes of vowels from
one to another family. These are not attested in any regular
sequence in any IE branch. However, Szemerényi presents
(p. 84) one (highly disordered) example from Greek, related
to *patếr* 'father':

i) *pa-tếr-a* (acc sing), where *-ter-* shows *e* (a short vowel
to be distinguished from Sanskrit *e*!) as the basic or full grade.

ii) *eu-pá-tor-a* (acc sing!), where *-tor-* shows the **o** grade
(i.e. *omicron*, short *o*). But note that this too is acc sing of
eu-pá-tōr 'good father' (see v), a noun belonging to a
different declension, as we shall see below. (Distinguish
Gk *o/ō* and S *o*!)

iii) *pa-tr-ós* (gen sing), where *-tr-* shows the zero or nil grade: here there is syncopation or loss of the vowel (*lopa* in NIGT).

iv) *pa-tḗr* (nom sing), where *-tḗr* shows the long-vowel (i.e. *ḗ*) grade.

v) *eu-pá-tōr* (nom sing! 'good father': see ii), where *-tōr* shows the long ō grade (that is ō-mega).

I do not know where the eminent linguist would place Gk *eu-pa-teîr-a* (nom sing, f 'she of a noble father'). It could be another basic one since the example *leî-pō* 'I quit, depart' is given as basic (same p. 84); or it could be long-vowel grade since the diphthong *ei* is long. Be that as it may (even a sixth grade?), Szemerényi admits that "not all grades are attested for every root" (p. 84). He also states "Very often only full grade [i.e. the vowel *e*], o-grade and zero grade are attested" (p. 84), i.e. only three grades. For this he gives the following examples:

a) *leîp-ō* (pres) *lé-loip-a* (perf) *é-lip-on* (aor) 'leave, depart';

b) *dérk-omai* (pres) *dé-dork-a* (perf) *é-dra-kon* (aor) 'perceive' (cf S *dṛś*);

c) *pénth-os* (neut, nom/acc sing) *pé-ponth-a* (perf) *é-path-on* 'grieve'.

Here we notice that we have quite different vowel sequences, even diphthongs, and in the zero grade we have no loss or syncopation but a vowel (*-lip-*, *-path-*).

In subsequent pages (85-6), Szemerényi gives more examples made up from different words and even languages (Gk *a-melg-ō*, L *mulg-eo* and S *mṛṣ-ṭa, mārṣ-ṭi* 'milk'). He also gives examples from Gothic and Old High German where all one can see clearly is that there are different sequences of vowels (short, long) and diphthongs without any general ordered pattern.

14. There is something incredibly wrong with Szemerényi's methodology. First, the five examples are

made up from two different stems: *patḗr* and *eu-pá-tōr* are inflected quite differently (see **§17**)! Thus we have two different vowels in each of the pairs of acc sing -** é** in (i) and -**o**- unaccented in (ii), and in each of the pairs of nom sing, - **ḗ**- in (iv) and -**ō**- unaccented in (v); and if we had the vocative for *eupátōr* we would see that the vowel here also is different -**e**- and **o** (again, see **§17**). The inflexion of *eu-pá-tōr* is streamlined, taking the short, unaccented -**o**- throughout all cases except nom sing.

Second, there is only one example of each of the other three in Greek. Paradigms (a) and (b) are tenses of verbs but paradigm (c) has a noun and two tenses of the related verb (because, no doubt, this verb has present tense not with this very stem but with the stem *pasch-*).

Third, in all three examples we see a change of vowel-quality from "full" to o-grade but example (a) is a diphthong (-*ei*- and -*oi*-) whereas (b) and (c) have short -*e*- and -*o*-. As for the zero grade, (a) has -*i*-, (b) has complete loss of vowel (i.e.-*dr*-) and (c) has -*a*-, even though examples (b) and (c) have the same vowels in the full grade and o-grade; complete loss of vowel in (c) would be difficult since a conjunct **p-nth* is unpronounceable, but it would not be so with -*lp*- since Greek has *help is* 'hope', and *melpō* 'praise in song' etc. **So no operating consistent law is evident.**

Fourth, other verbs with full grade -*ei*- in the present stem have no -*oi*- or -*o*- in the perfect (sometimes nowhere): e.g. *aleiph-ō* 'anoint' with perf *al-ē-liph-*; *egeir-ō* 'wake, get up' has for perf both -*ger*- and -*gor*-; *klei-ō* : (*klēi-ō*: stem kleF, KlēF, klaF?) 'close' with perfect stems *ke-klei*- and *keklēi-*; *peith-ō* (weak stem *pith-*) 'persuade' with perf *pe-pei-* (*GEL*) but in the Middle Voice, yes, *pe-poi-* 'I am confident, persuaded'; *pein-ṓ]* 'I am hungry' with perf *pe-pein-* (*GEL*); *phtheir-ō* 'destroy, corrupt' with perf *é-phthar-* (only Aeolic pres *phthérrō* > perf part active *e-phthor-*).

So here again, **no regular law is operating.** IEL gives no explanation for these differences.

Fifth, many verbs have -ŏ̆- or -ou- in the present stem, which, according to examples (b) and (c) should have full grade -e-: e.g. *akoû-ō* 'hear', *akro-á-* (late) 'harken', *aró-ō* 'plough', *blōsk-ō* 'go, come', *bo-á-ō* 'shout', *go-á-ō* 'groan', *dok-é-ō* 'think', *kopt-ō* 'cut', *kroû-ō* (late) 'strike', *loû-ō* (*lo-é-ō*) 'wash' etc., etc. Many of these have the vowel -o (or -ou-) in the perf stem as well.

Sixth, many verbs have the same stem-vowel in both present and perfect (and some in all or most tenses): *are-sk-ō* 'make good' perf *ar-é**re**-ka*; *deîk-nu-mi/* *-knú-ō* (Ion *dek-*, Cret *dik-*) 'show forth' perf *-**dei**ch-*; *lú-ō* 'loose-n' perf *le-**lu**-ka*; *pne(i)-ō* (stem *pneF/pneu-*) perf *pe-**pneu**-*; etc., etc.

From all this mass of data certain forms are selected, are given an arbitrary order and thus presented as ablaut or vowel gradation. The facts show various series of vowelchanges (and sometimes none) in different tenses – that is all. This may be called "ablaut", but no general and constant laws emerge governing these changes. Unlike the changes in Sanskrit, these are haphazard and confused.

15. Much is made of the change in Greek of the verb-stem (usually called "root") vowel -e- to the noun-stem vowel -o-. This may be the basis for the notion of ablaut in Greek, since this, certainly, seems to have greater regularity than the vowel changes in the verb-forms. Undoubtedly, here we see many examples where the stem of m nouns has -o- while the verb-stem has -e-: e.g. *de̋l-eázō* 'entice' and *dó̋l-os* 'bait', *lég-ō* 'say' and *lóg-os* 'speech', *tréph-ō* 'feed' and *troph-ós* 'feeder' (m and f), *tréch-ō* 'run' and *troch-ós* 'wheel', *phér-ō* 'bear' and *phór-os* 'tribute', etc. A similar change occurs with f nouns in -ḗ: e.g. *mén-ō* 'stay' > *mon-ḗ* 'abiding', *ném-ō* 'allot, graze' > *nom-ḗ* 'distribution, pasturage' (m *nóm-os* 'usage, law'), *pné(i)-ō* 'blow, breathe' > *pno-ḗ* 'blast, breath', etc.

However, even this situation is not clear-cut. While the feminines are certain (except very few like *phu-g-ế* 'flight' < *pheûg-ō* 'flee'), several masculines of this class have an *-e-* : *gel-áō* 'laugh' > *gel-õs* 'laughter', *dē-ō* 'bind' > *de-s-mós*, *xé-ō* 'plane off, polish' > *xe-s-mós* 'abrasion'; then, there are others that do not seem to have a primary cognate verb: e.g. *zẽl-os* 'zeal, jealousy', *nek-r-ós* 'corpse', *xén-os* 'guest, stranger', etc.; with such masculines the cognate verbs *zếl-óō, nek-róō, xen-óō* are derivatives, though the stem *nek-* has a cognate √*naś-* in Sanskrit. Moreover, most of these verbs with   an *e*-stem have neuters ending in *-ma* or *-os* with unaltered stem-vowel: e.g. *dēō* 'bind' > *de-ma* 'band, rope' (also *de-s-ma* 'bond', like m. *de-s-mós* 'bond'); *zeûg-nu-mi* 'yoke' > *zeûg-os* 'pair' (and m/n *zug-ó-* 'yoke, cross-bar'); *lépō* 'peel' > *lép-os* 'husk'; *pnéō* > *pneû-ma* 'air, breath'; etc.

From the point of view of our discussion, one of the more interesting cases is the verb *che-ō* 'pour out' (PIE the root being given as **gheu* by IEL). This has for its perfect stem (active and passive) *ké-**chu**-*. We find the f *cho-ế* 'drink-offering' and m *choós / choeûs / choûs* 'a measure of capacity' (and *choûs* 'soil') and neut *cheû-ma*; but also m. *chu-l-ós* and *chu-m-ós* 'juice, flavour', n. *chú-ma* 'what flows' and f. *chú-sis* 'act of pouring'; also f. *chú-tra* and m. *chú-tros* 'earthen pot' (Ion *kú-thra, kú-thros*). Similar, though not quite so productive, is *rhē-ō* 'flow' with perf stem *erh-**rhu**-ē-ka*, the normal f. *rho-ế* 'flowing, stream', m. *rhó-os* (Cypriot *rhó-F-os*, Attic *rhoûs*) 'current' and n. *rheû-ma* 'what flows, stream'; but also m. *rhû-ax* 'torrent' and *rhú-as* (adj) 'fluid'. (Both *che-ō* and *rhe-o* with the stems *-chu-* and *-rhu-* are cognate with S √*hu* > *ju-ho-ti* 'sacrifice, pour butter' and √sru > *sráva-ti* 'flow': see also n11, vii & viii.) Here again we see no regular law operating.

16. All the disparate Greek linguistic elements that have been examined in the preceding sections seem to me to be

decays and corruptions. Any semblance of order is the result of innovation through analogy and assimilation. As in all languages, the frequent exceptions to the many "regular" phenomena show precisely that the apparent "order" is not original or genuine. We must not forget that Greek appears in many dialects some of which have left very little early written evidence. The variants *ch-ú-tra* / *k-ú-thra* are interesting in showing the same vowel but different consonants. Greek is on the whole unreliable.

From all these disparate elements that exhibit no truly ordered pattern in any one organically connected group of words (verbs and nouns), the latest IEL concludes that there must have been five grades of ablaut. This is entirely arbitrary and we are not told **what principles govern these changes and what vowel grade should appear in what form of cognate nouns and verbs.** So let us explore another aspect.

17. Although Szemerényi hyphenates thus *pa-tér-a*, he obviously takes *pa-te(ē)-r* as the root. So do others, including Watkins, who gives as root IE *pə̄ter-* (without asterisk, as though this form is attested) and also the "oldest form *pə₂ter*". But *pater/pə₂ter-* is not strictly a "root" since Greek and Sanskrit (and other IE branches) have other similarly formed nouns, i.e. with the suffix *-ter* : thus Gk *mḗ-tēr* 'mother', *gas-tḗr* 'belly' (also *gas-tr-a/ē* 'paunch'), etc. The morpheme *-ter-* is (or represents an older form of) a suffix which gives agent-/relationnouns (like the Sanskrit *-tr̥-*). Greek has in addition *dŏ-tḗr* 'giver', *zōs-tḗr* 'belt', *kran-tḗr* 'accomplisher', etc., but also *dó-tōr* 'giver', *eupá-tōr* 'good father', etc., all of which are inflected differently from *pa-tḗr*. All these nouns are in fact derivatives and the "root" is strictly the initial morpheme *-pa/pə*, *mē-*, *gas-*, *dŏ̆-*, etc. So the ablaut occurs not in the root but in the suffix, which is the termination of the stem (or theme) of the noun(s) formed from the root(s)[5]. The following Table shows the declension

in the singular of two Sanskrit nouns and three Greek ones and their similarities and differences:

	S1	S2	Gk1	Gk2	Gk3	
Nom	netá	pitá	patér	dotér	dótōr	strong
Voc	nétar	pítar	páter	dotér	dótor	»
Acc	netáram	pítáram	patéra	dotḗra	dótōra	»
Inst.	netrá	pitrá	–	–	–	weak
Dat	netré	pitré	patrí	dotḗri	dṓtori	»
Abl	netúḥ	pitúḥ	–			
Gen	»	»	*patéros dotḗros dṓtoros			»
		*(in Epic; *patrós* in later Attic)				
Loc	netári	pitári	–	–	–	»

i) We ignore the presence in Sanskrit of the three cases absent in Greek. Some traces of these are found in Greek also and many more in the other IE languages – thus confirming that the eight Sanskrit cases are PIE.

ii) In Greek we find two variants (*-tēr* and *-tōr*) corresponding to the one Sanskrit suffix *-tr̥*.

iii) The Sanskrit nouns show no syncopation: the stem in the inst and dat is the weak *pitr̥* where the **-r-** replaces its own vowel r̥ before the terminations *-ā* and *-e* of the two cases. So, apart from the locative which shows unexpectedly a strengthened stem *pitar-*, the cases (as in the dual and plural also) exhibit strong (*-tǎr*) and weak (*-tr̥*) stem very regularly. The abl and gen ending *-uḥ* (=*ur/s*) is also odd in that it should

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[5] IE linguists give *pə* as the PIE root for Gk and Latin *pa-ter* and S *pi-tar-* : this may be right but cannot be verified and there is no other evidence to corroborate it. S has no dhātu *pa* and the NIGT derives *pi-tr̥* from √pā 'protecting'. So Sanskrit either had a root *pa* which was lost or the radical vowel of √pā suffered a severe and most irregular change – unlike the nouns *dā-tr̥* from √*dā*, *dhā-tr̥* from √*dhā*, *mā-tr̥* from √*mā*; in any case √*pā* does generate *pā-tr̥* 'defender', *pā-yu* 'protector', etc.

be *ne-tr-as (<netṛ +as), but we find in Old Norse fǫður 'of father' and the close variant of Avestan ending -əzəš.[6] So this apparent irregularity may have been already established in PIE.

iv) The two Sanskrit nouns show variations only in the one strong case, acc, where the agent-noun has long -ā- and the relation-noun short -a-. This holds for all agent-nouns (kartṛ, dātṛ, dhātṛ etc.) and all relation-nouns (duhitṛ, māstṛ, svasṛ, etc.). This vowel difference may be a chance event or may deliberately reflect the difference between the two nouncategories.

v) In Greek there is a third variant termination -tōr with yet again different inflexions. (Compare Latin vic-tor and magis-ter.) Moreover, Greek has many more stems in -ér (not -tér) that are inflected like patér : e.g. a-ér 'mist, air', aith ér 'ether', an-ér 'man' without syncopation in the Epics and with syncopation containing -d-: gen an-é-ros and an-d-rós, etc.; also nouns in -ōr (not -tōr) like ich-ōr 'ichor', pel-ōr 'prodigy, monster', etc.

vi) The Sanskrit paradigms show greater regularity and reasonableness than the Greek ones – except for the curious strengthened locative.

vii) Paradigms in other languages show complete regularisation and loss of the distinction strong-weak: e.g. Latin has māter nom and mātr- in all other cases and Old Slavic mati nom and mater- in all other cases. And Szemerényi states "This distribution [i.e. strong/weak cases] is ...preserved only in Old Indic and partially in Greek" (p. 171).

ix) The **inevitable conclusion** is that, again, Sanskrit is much closer to PIE. Yet IEL holds that Sanskrit, which in so many other respects, even by IEL, preserves PIE elements and forms more faithfully, lost the original vowels ĕ and ŏ (and

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[6] It is very difficult to see how the termination -tras could be corrupted into -tur. The IE linguists' supposed original *-ros for gen sing is entirely conjectural and as such valueless.

original diphthongs *ei, eu, oi, ou* and *ai*). This story is long, starting with K. Brugmann (1897-) who proposed that to the three Sanskrit *a, i, u* vowels should be added those found in Greek also. Baldi sums up the situation: "in the history of Sanskrit there occurred a change in the vowel system that had a monumental effect on the overall structure of that system: in Sanskrit the Indo-European vowels *ĕ̄, * ŏ̄, *ā̆ all merged together as *ā*". This description is so entirely hypothetical as to be (in an impartial court of Law) valueless. First, the history of Sanskrit prior to the *RV* is totally unknown. Second, in the *RV* and subsequent texts there is no trace of *ĕ* or *ŏ* as there are traces of other elements in other IE branches that are fully evident in Sanskrit, like *r̥* and *l̥*, roots and terminations, accent, strong-weak persons and cases, etc. Finally, the existence of *ĕ* and *ŏ* etc. in PIE is asserted only on the evidence of Greek and other IE branches which are on the whole far more distanced from PIE than Sanskrit and show too many losses and corruptions in all other aspects; consequently their evidence is unreliable and the PIE "reconstructed" system is, in any case, based on tiers of conjectures. It could well be that *ĕ*, *ŏ* etc. are not original but devolutes or corruptions of an original *ā̆*. After all there are many phonemes in modern IE languages (*th* in *the* or *thin*, *z* in *zoo* etc.) that are not regarded as PIE.

S.S. Misra pertinently pointed out that until now "no evidence... is available that Proto-Indo-European *a, e, o* (as reconstructed by Brugmann etc.) have merged [into *a*] in India"(1992: 81). What Misra meant is that the IEL "evidences" are assertions of faith based on arbitrary reconstructions. On the contrary, he took examples from the Gypsy language which is IE and came out of India (Hock 1996; Fraser 1995: chs 1-2) showing how original *a* became *e* and *o*. For *a>o* he cites but few examples: S *śmaśru* 'beard' > Gyp *šošă*; S *śaśa* 'hare' > Gyp *sosoi*; S *mardati* 'opress, overcome' > Gyp *morel* 'rule'. Many more are cited for a>e: S *khara* 'donkey', *jana* 'person, people', *daśa* 'ten', *divasa*

'day', *dhar-ati* 'holds', *nava* 'new' became in Gyp *kher, jeno* (cf GK *genos*), *des* (cf Gk *deka*, L *decem*), *dives, nevo* (cf Gk *neFo-*), etc. He might have cited also a similar process of *ă,>e/o* from Old English to New (noting the current pronunciation rather than the spelling): *bald->*bold; *bapian>*to bathe; *faran>*to fare; *fram>*from; *hāl->*hail; *hām>*home; *hat>*hot; etc. Such changes in English may well have been produced by the heavy infusion of the Norman language after the Conquest in 1066 but, nonetheless, we see that it is not easy to maintain a simple *a* and *ā* in speech, despite (widespread) literacy.

Let us now turn to the consonants. We shall examine the so-called labio-velars which IEL postulates for PIE and the retroflex or cerebral stops which are present in Sanskrit but are not at all recognised as PIE by IEL and are regarded as intrusions from non-IE languages. (The AIT of course ascribes them to "natives" whose speech converged with Indoaryan – so Hock 1996 – and gave the celebrals to Sanskrit.)

18. The Sanskrit phonological system has unique regularity. The five places of articulation engender not only vowels but also various types of consonants combining the sound of breath and of voice. (I shall not examine the nasals because this issue would take us too far.) Thus this highly ordered phonology has five vowels and five sequences or families of consonants each corresponding to a vowel. The velar/guttural *kaṇṭhya* family (corresponding to अ *a*) has क *ka*, ख *kha*, ग *ga*, घ *gha*, where the first is a mute sound, the second mute aspirate, the third voiced and the fourth voiced aspirate (the second and fourth being called *mahāprāṇa*). Similarly the *tālavya* 'palatal' family (vowel *i*) has च *ca*, छ *cha*, ज *ja* and भ *jha*. Similar too is the third family (vowel *ṛ*) *mūrdhanya* 'retroflex/cerebral': ट *ṭa*, ठ *ṭha*, ड *ḍa* and ढ *ḍha*. We find similar families for dentals (*ta, tha, da, dha*) and labials (*pa, pha, ba, bha*).

In adding an *-a* to every consonant I follow the NIGT and not the modern IEL which persists in presenting these

phonemes without the -*a*. The reason is very simple and is contained both in experience and in the very terms "consonant" and "stop", used to denote these sounds. Unlike vowels which sound by themselves, without need of support other than desire to sound them and supply of air in the outgoing breath, a consonant cannot sound by itself, without the aid of an immediately following vowel. The term 'stop', on the other hand implies that it stops the preceding sound (of a vowel, as in *book, eat, hitch, lock, up* and the like). We have grown so used to our speech habits that we think stops like k, j, t, dh, b, etc. are independent and distinct sounds. They are not: they cannot be pronounced on their own! Our misconception is based on three things: (a) We have grown used to seeing the different symbols in writing. (b) Our vocal instruments take a distinct (though not always correct) position for their articulation. (c) We often add an indistinct vowel or breath-sound at the end or turn a voiced stop into a fricative: thus *back* becomes in speech *back-ə* or *back-h* and *lag* becomes *lag-ə* or *laγ* – and so on. Every one of these stops acquires in addition other qualities (and thus changes) according to the sound environment in which it is articulated: thus *wind-jacket* sounds as *wm̃-j-jacket* or else *wind-ə jacket* or *wind-h jacket*. Hence the addition of a (> *ka, ja* etc.) is strictly necessary.

19. The consonants are independent and distinct sounds but only if they are articulated with an immediately following vowel.[7] In every other case, before a pause (i.e. at the end of a speech unit), they are unpronounceable and we know what is intended by virtue of the context, when others speak, or by the position of the vocal instruments when we ourselves speak. One has only to experiment for a short period.

20. Another important aspect is that some consonants in Sanskrit were most probably pronounced in ancient times quite differently from what we are accustomed today. An obvious example is व *va*, which was originally given as a labial but is now pronounced as a labio-dental (and is so found in many modern languages like E 'vivid, rove' etc.). Very

different were, probably, the *ūṣman* (=sibilant) श *śa*, ष *ṣa* and स *sa*. First of all, if one experiments, one will undoubtedly discover that these are not strictly stops (=*sparśa*) but can go on sounding like nasals and vowels. Then one finds that the so-called modern dental *s* , as in E 'ass, sustain' etc., is not dental at all (like *ta* or *da*) but is pronounced with the back of the front-part of the tongue curved upward and almost touching the upper gum while the tip of the tongue touches the lower front teeth! The sound in E 'she, shoe, wash' etc., again, has little to do with S *śa*: the mode of articulation of the modern sound *sh* differs very little with regard to place and effort from that of the modern *s*. The S *śa* was called *ūṣman* not for nothing: for, if pronounced on the basis of *i*, it is a hot and spirant sound. Please experiment.

Actually, the Sanskrit palatal stops could not have been the sounds used today – in India or elsewhere. S च *ca* is often said to be like the sound in Italian *citta* 'city' or E 'chop, each' etc.; then another *h* is added at the end to give the S छ *cha*. These modern sounds are pronounced much like the sibilant *sh* the difference being that with the stops there is contact. All palatal stops *ca, cha, ja, jha* when pronounced on the basis of *i* are quite different sounds from those we ordinarily use. When speaking mechanically without really attending, as most of us usually do, it is very easy to utilise only a small segment of our vocal machinery so as to move the jaws, lips and tongue as little as possible. I feel certain that the original Vedic speech and the earlier PIE sounds were quite different.

Today, we have projected back our own rather lazy sounds resting content in our delusory confidence. The IEL gives the palatals with the symbols *k', k'h, g', g'h* thus showing

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[7] Here, throughout, I refer only to the sounds contained in the pratyāhara *jhay* of the *maheśvarasūtras*. H. H. Hock rightly calls them "nonsyllabic" but includes other sounds, like nasals (1991: 23), which can be pronounced without an immediately following vowel.

the variety of sounds that approximate the velars or gutturals; but this is theoretical without a good description of practical pronunciation or, at best, another easy and lazy variety. With some attention and on the basis of *i*, a different variety for S *ca* (and the rest) arises that is intermediate between the IEL *k'* and the modern English *ch* (as in 'itch' or 'chop'). If we really want to investigate ancient pronunciation (=phonetics) we must not be content with symbols on paper but first must learn to put aside our own mechanical speech habits.

21. The modern IEL postulates, among other questionable entities, a series of stops called "labio-velars" (Watkins, p. xvii; Szemerényi, p. 69; etc.). These are indicated by the lettersymbols g^w, k^w, g^wh, k^wh[8]. These conjectural consonants seem totally unnecessary for several reasons, one of which is most fundamental: they are simply unpronounceable. (Note also that the series has no corresponding vowel.) Let us see.

A "labio-velar" consonant implies the simultaneous use of the back of the tongue (and mouth as for *a* and *aka*) and of the lips (as for *u* or *upu*). Is this a unitary sound like *gh(-a)* or something else?... The very notation g^w or k^w etc. indicates (to me) two immediately consecutive but quite distinct sounds, a consonant proper and a vowel-glide. Indeed this is what one hears when attempting to pronounce any one of them. What is, for example, the sound of $*g^w\bar{a}$ (or $*g^wem$-) 'to go, come' (Watkins, 33: no asterisk)?... Whatever twists and tricks I use, and however swiftly, holding the mouth open and pursing the lips, I get a good variety of *g-u/-vā, gō/gö* or plain *gā* but not a unitary consonant g^w (different from velar *ga*) and the vowel *ā*. Or take $*k^wi$ ('who': Watkins 46: no asterisk): again I obtain *kū/-v-i, u-k-v-i, kü* and so on. Please experiment. (The fact is that no IEL book says how exactly these sounds are pronounced.)

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[8] So Szemerényi, p. 69. Baldi gives the series as k^w g^w, g^wh, k^wh (p 17).

22. Another very curious example (not from the labio-velar series) is *dhghem* (Watkins, 20): this means 'earthling, man' and the like and is a cognate (indeed, the origin) of Gk *chthōn* 'earth' (>*auto-chthon* 'indigenous'), L *homo* 'man' (and 'humus, humility' etc.) and S *kṣām-* 'earth' (also *kṣam, kṣamā* 'endurance'). How does one pronounce *dhghe*?... The first sound I got is *dghe*, with the *d-* slightly muted. Then I got *dhǝghe* or *δghe* (affricate with *-ghe*) or an infinitesimal but audible pause after *dh-* and before *-ghe* – but not *dhghe* in the way I get other initial or medial conjunct consonants. The aspiration in the consonant *dh* requires, in speech, immediate release with a vowel or semivowel nasal and vowel. Even Szemerényi acknowledges the difficulty of this initial conjunct.

Watkins gives also a conjunct with a labio-velar consonant, *dhg^whei-* 'to perish'. This is the distant origin of "phthisis" 'consumption' (<Gk *phthi-*) and S *kṣī* > *kṣīyate* (*kṣiṇāti*). Here one meets insuperable difficulties. Don't bother to try this. Even attempts to pronounce *phthisis* will produce at least an affricate, *fthi-* or *pthi-* or *pθi-*.

23. It is possible that the speakers of PIE in very ancient times had extra-ordinary abilities and could pronounce labio-velars as unitary consonants or conjuncts of the type *phth* or even *dhg^wh* – but no more I think than that, in some very distant epoch, some trees had a vagina and could get impregnated by men, whence arose the myths that humans emerged from trees. In theory, on paper, such sounds look fine, but in reality they are unpronounceable.

Sanskrit has of course dhātus ending in aspirates *indh, iṅkh, math, stubh*, etc., but these are theoretical or mental concepts rather than words used in speech and in the *Dhātupātha* are invariably given with a following vowel *-indhī, iṅkhī, mantha*, etc. In actual speech, we find *anuṣṭu-p*, or *stubdha* 'hymned' (where the aspiration is transferred onto the next unvoiced consonant *-ta* and this appears now as the voiced *-dha*) or *anu-ṣṭhubh-yām* 'with two anuṣṭubhs' (where

a semivowel follows). These and similar combinations are pronounceable.[9] For this reason, Sanskrit preserved them when the other IE branches lost them completely except for the *tha, pha, cha* (=kha=χα) preserved in Greek.

24. Just as the other IE branches lost the voiced aspirates completely, it is possible that they lost the mūrdhanya consonants also. It is possible of course, that these sounds came into Sanskrit from non-IE languages. The usual view is found in MacDonell: "The cerebrals are entirely secondary, being a specifically Indian product and unknown in the Indo-Iranian period. They are probably due to aboriginal, especially Dravidian influences" (p. 8). If so, this must have happened at a very distant past since the *RV* has many words with these sounds, though *ṭa, ṭha, ḍa, ḍha* are not initial. However, I doubt this because no "Indo-Iranian" period is attested but is only a conjecture and because there are other considerations.

To begin with, as **Hock points out, "retroflexion is found in many European forms of speech... but is limited to local and regional dialects" (1991: 78).** So there is nothing very exotic or South Indian about this vocal phenomenon. Since it has not been borrowed by modern Europeans from "aboriginal natives", we need not assume that the ancient Indoaryans borrowed it from non-IE speakers (whose existence is assumed largely on the "evidence" of such "borrowed" vocables). At most, what may be said is that the Indoaryans developed themselves these sounds. Since PIE had the retroflex *r* and *ra*, there is no reason, theoretically at least, why it should not have had the consonants belonging to this family. Sanskritists are quite habituated to the sight of retroflex *ṇ* or *ṣ* following the vowel *r̥-: prāṇa, vr̥ṇoti, dr̥ṣṭi* (where the

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[9] IEL says that some at least sandhi processes in Sanskrit are due either to losses or innovations. This may be true to some degree, but long experimentation with Sanskrit sandhis shows that, on the whole (barring some cases of hiatus), they are very natural. However, a discussion of this topic too must be put aside at present.

influence reaches even -ṭ-), *vṛṣṇi* (loc sing of *vṛṣan*), etc.
Common phenomenon is also the cerebral -ṣ after an *i*, or *u* as
in the loc pl *nadīṣu, manuṣu*, etc. However, we find many
situations where the phenomenon does not occur. Thus we
have *nṝṇām, pitṝṇām* etc. but *nṝn* and *pitṝn* (acc pl) where,
in the latter case, one would want to keep one's tongue in the
same position (*nṝṇ*) rather than flick it forward for the dental
nasal. True, such examples are limited and there are the rules
of grammar – but why have this rule?... The form *pitṝṇ* could
be recognised just as easily as *pitṝṇ*. Then, in contrast to *dṛṣti*
we have *dṛśya* and in contrast to *vṛṣṇi* we find *pṛśni*.
Also we find *bṛsaya*, the dark demon, and *bṛsī* 'pad of grass';
also *pusta-ka* 'manuscript' without the -ṣṭ-, which one
expects after *u*- (as in *manu-ṣu*, above, and *pu-ṣṭ-i* 'growth').
Are we to suppose that such cases were forgotten somehow
or retained for specific purposes?... I do not think so.

Misra informs us that an intervening *m* prevents
cerebralisation in *hiṃsā* 'injury', *puṃsām* 'of men', and
explains that forms like *havīṃṣī* 'oblations' (neut, pl) are
innovations analogical to *bharanti* 'those bearing' (neut, pl)
(1975: 76), but in view of so many other anomalies one
wonders whether these explanations are correct.

25. Then, there is another strange phenomenon. The
√*muh* 'be stupefied' has for its ppp *mugdha* in the *RV* and
mūḍha in the *AV*. Here, it can be argued, we see the process
of *ḍha* appearing and establishing itself in Vedic since the *RV*
is generally older than the *AV*. This may be true but the
argument is not very convincing. In general, yes, large
portions of the *AV* are younger than the *RV* just as Bks VIII, IX
and X of the *RV* are younger than other Maṇḍalas. But, in
general, variations of forms may be due to differences in
regional and dialectal variations in pronunciation and not
necessarily to a time differential. Second, and more important,
there is √*ruh* > *róhati* 'grows, ascends' (given in Mayrhofer as
ródhati), which has only ppp *rūḍha* (*rodhum* and *rūḍhvā*) in
Vedic. Here again, it may be argued that other, earlier forms

(*ruddha / *rūgdha?) disappeared. Perhaps. But we find also √mih > méhati 'urinate, emit semen' with ppp mīḍha and ppa mīḍhvas only in the RV. Moreover we find √rih > reḍhi and its allomorph √lih > leḍhi 'licks' with ppp rīḍha and līḍha. And mih and rih are roots of indubitable IE pedigree: for S mih- Av -maezaʰti, Gk omich-, L meiere, Gm migere, etc.; for S r-/l-ih- Av road-, Gk e-leuth- 'free' and leichō 'lick', Gm liud- and liut, etc.

Thus we find perfectly IE roots with derivatives that have the retroflex consonant ḍha (or ḷha). How come?... (MacDonell gives conjectural reconstructions by way of explanation in §8 and §15i, pp 8, 18, but the plain truth is that we do not know).

26. There is a principle of IEL, more or less tacitly accepted, that linguistic change is fairly general and regular. In the example of -ḍha we see that √muh has both mūḍha and mugdha and that it can be claimed that here is proof or indication of the change (whether native internal development or borrowing from non- IE languages). We also find roots that do not have ppp with -gdha (e.g. mīḍha, rīḍha/ līḍha and rūḍha). Here it may be claimed that the older forms with -gdha went out of use. However, if this change was fairly general and regular, then we should find ppp with -ḍha for many other roots of similar form, i.e. ending in -h. We have certainly tr̥(n)h 'crushing' > ppp tr̥ḍha 'crushed' and dr̥(n)h 'be/make firm' > dr̥ḍha 'made firm', etc. But we also have dih 'smearing', duh 'extracting', snih 'be moist, fond of' etc.: these have ppp in -gdha. Obviously these latter were not affected in the least by the "general and regular change".

I think we should forget the "general change". In our examples, some roots have derivatives with -gdha- and others with -ḍha (ḷha). Some roots that have no apparent IE cognates, like dah 'burning', have ppp in -gdha: if these were of non-IE origin, they, I would expect, should be among the first to exhibit the change to -ḍha (but they don't). Then some roots with obvious IE cognations like mih and rih/ lih have ppp in -ḍha.

Another case is interesting. MacDonell cites *dū-ḍhī* 'ill-disposed' and derives it from **duz-dhī* (=*dur-dhī*). This may have been so. But then we find so many rigvedic words that do not show such a change: *dur-dhita* 'untidy', *dur-dṛṣīka* 'looking bad', *dur-dhara* 'difficult to carry' etc. MacDonell cites also *nī-ḍa* 'nest' (<*niz-da) but again we find in the *RV nir-dī* 'fly away' *nir-duh-* 'extract', etc. So, finally, here we have *ḍa*.

To me at any rate, these evidences suggest that Vedic had from the earliest times the retroflex consonants *ḍa* and *dha* and it is unnecessary to speculate that it borrowed them from elsewhere or that they resulted from a change of dental *da* and *dha* (or whatever). (I do not, however, rule out that there were other, non IE languages and that these probably influenced Vedic; but this is another matter.)

27. We now have retroflex sounds *ṛ, ra, ṣa, ṭa, ḍa, dha*. Given the regularity of Sanskrit phonetics, we should expect to find the retroflex consonant *tha* also. The aspirate *tha* is admittedly comparatively rare and it need not detain us longer. But we must note that *ḍa* is found also in situations other than those which MacDonell cites: e.g. words like *daṇḍá* 'stick, staff'(and its cognates), *naḍá* 'reed' √*pīḍ* 'pressing'(and its cognates) all three in the *RV*. For the root *pīḍ* Mayrhofer gives an IE cognate in Gk *piéz-ō* 'I press'.

All these evidences suggest not only that that the cerebral phonemes were wellestablished in Vedic but also that they probably were PIE. That Vedic borrowed from non-IE languages is a distinct possibility. But unless we find early attestation for non-IE languages of approximately the same period as the *RV* (i.e. sometime in the fourth millennium BC), or unless we find pre-rigvedic Indoaryan texts free of cerebrals (e.g. *danda, *mīdha, *ledhum etc.), it is utterly useless to speculate about this matter. There are words with cerebrals appearing in post-vedic texts and these may be intrusions into Sanskrit from non-IE languages (i.e. Munda and Dravidian) but even in these cases there are strong reasons for caution.

Just because a word does not appear in the *RV* or the *AV* it does not mean that the word was not in the early language: it is very doubtful that these Saṃhitās contain all the words then available. But if a word (that has no IE cognates at all and cannot be reduced to a Sanskrit dhātu) appears in late classical texts, that is after the sūtras and the epics, then it is fairly certain that it is a loan. Another reason for uncertainty is the chronology. Under the distorting influence of the AIT the chronologies given for the Saṃhitās, the Brāhmaṇas, the Sūtras, the Epics etc., are far too recent. Such dates should no longer be tenable. A third difficulty is that the Epics and a work like the *Manusmṛti* may in their finished form belong to c 100 BC or 100 CE, but they most certainly contain much material that goes back a very long time. So the hunt for foreign words in Sanskrit is at present no profitable pursuit – as was indeed shown by R. P. Das (1995).

28. The latest IEL does not give, I think, importance to the principle of the inner organic coherence of a language. The basis of this is the root or dhātu ("seed-" or "elemental form" might be a better term). This principle is observable even in non-inflected modern languages like English. The English morpheme act, comes from French *acte* and Latin *actum*, and so goes back to cognates of L and Gk *ag-*, OIr *aig,* S *aj* etc. This can be taken as a root generating numerous verbal and nominal forms like *act-s/-ed/-ing, act-ion/-ive-ly, activ-ate/-ity* etc. Thus all these words can be said to derive from the "root" act.

Early sanskritists stressed the importance of the dhātu in Sanskrit. This is evident in (Sir) Monier Williams' *A Practical Grammar of the Sanskrit Language* (4th ed., 1876: 51-5, §§ 74-6). In this *Grammar,* Monier-Williams devotes many pages in showing how, in the line of the NIGT, the roots engender primary (*kṛt*) and secondary (*taddhita*) derivatives with various suffixes and with the corresponding ablaut of the radical vowel (pp 57-75, §§ 80-7). The same scholar arranged, as best he could with the limited resources and

means of his time, his *Sanskrit-English Dictionary* (1899) on the basis of the dhātu, giving it in bold letters, then giving derivatives and cognates under the dhātu – but not always as fully and successfully as might be done. Then W. D. Whitney presented the roots and derivatives under them in his own publication of 1885. Instead of continuing and perfecting this practice, subsequent sanskritists barely mention the root or the process of wordformation. M. Mayrhofer's *Wörterbuch*... (=Dictionary) is excellent in concentrating the results of two centuries of research in the Sanskrit language by numerous (mainly Western) scholars. But here verbs are given in the third person sing. (=*prathama puruṣa* in the NIGT): e.g. *ṛṇóti, degdhi*, etc. without mention of the root; and although he gives crossreferences, the nouns, adjectives, etc. are also given without any mention of the root.

29. T. Burrow, whose *The Sanskrit Language* is still the authority in this field, wrote: "Chiefly owing to its antiquity the Sanskrit Language is more readily analysable, and its roots more easily separable from accretionary elements than is the case with any other IE language" (1973: 289). The NIGT of course recognised the significance of the roots and early on collected them in "root-lists" *Dhātupaṭha* (Palsule 1961). Indeed, no other IE language can be analysed to the same degree and disclose roots, nor show a regular operation of principles whereby nouns and verbs are formed – at least not as in Sanskrit. Suffice it to say that in Greek, which has, more than any other early IE stock, many common features with Sanskrit (despite their *kentum-satəm* difference), it is very difficult, if not impossible, to extract clear and definite roots or see constant principles in the formation of nouns and verbs: a hint of this is to be found in §§ 12-14 above. Sanskrit also must have suffered attrition and losses of words and roots, while many nouns and indeclinables cannot be assigned to a root at all. Nonetheless, the roots, affixes, suffixes and terminations are clearly separable in most cases.

An important aspect is that many roots, particularly those (but not all) of class II *ad-ādi-gaṇa*, function as stems of both

verbs and nouns. Thus √*dviṣ* 'hating' can take immediately the terminations of noun and verb: e.g. *dviṣ+s* (nom sing) >*dviṭ* 'foe, hatred'; *dviṣ+mas* > *dviṣmas* 'we hate'. Of course, for the strong persons the stem undergoes the ablaut of the radical vowel into the guṇa grade: thus, *dviṣ+mi*>*dveṣ-mi* 'I hate'. The operation of sandhi brings about other changes as well: e.g. *dviṣ+si*>*dvekṣi*.

Then we have √*viś-* 'settling, entering' (class VI *tud-ādi-gaṇa*). This gives us f *viṭ* (nom sing) 'clan, settlement'. This same root takes the suffix *-a* , which necessitates the guṇa (or vṛddhi) grade of the radical vowel, and gives the primary derivative noun veśa (m) 'settler, settlement'; with the addition of the affix *-ya*, which necessitates the vṛddhi (sometimes the guṇa) grade, the stem *veśa* gives now the secondary derivative (m) *vai-śy*a 'settler, producer/trader'. Thus Sanskrit has three levels of nominal (and adjectival) stems – radical (no change in root-vowel), primary and secondary derivatives (with necessary changes in the root-vowel).[10]

Similar principles regulate the formation of the verbal stem according to the class in which the root belongs. This √*viś* , which is class VI, has its vowel unchanged but takes the affix *-a-* and then the terminations: thus *viś+a+ti*>*viśati* 'one settles'; it has a strong stem with guṇa grade *veś-* (perf *vi-veś-a* 'one has settled') but not in the present tense and the imperfect. A root of class I *bhv-ādi-gaṇa* like √*cit* takes the

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[10] The vṛddhi-grade forms are far less common in the *RV* than the guṇa-grade but they increase in the later language. Apart from *-ya* other suffixes that (may and often do) necessitate vṛddhi are *-a* for the formation of abstract nouns, patronymics etc (e.g. *manu* > *mānava, śuc-i* > *śau c-a; viśva-* > *vaiśva-*), *-aka* (e.g. √*tap* > *tāp-aka* 'heat-producing'; √*nī* 'leading' > *nāy-aka* 'one who leads'), *-eya* for adjectives (e.g. *āgn-eya* 'of agni'; *pau ruṣ-eya* 'of man'), etc.

Now look at nominal formations in Greek from verbs with apparently very similar stems, given alphabetically. Some like *bdeō, xeō* etc have been left out. Observe that some show no grade change and others show totally unexpected changes.

affix -*a*- too, but also guṇa grade in the stem of the present and imperfect: *cit+a+ti* > *cet-a-ti* 'one perceives, is conscious of'. Apart from the usual tenses, moods and voices (active, middle and passive), found in Greek and Latin, the Sanskrit verb-system has causative (*cet-áya-ti* 'makes someone else conscious of'), desiderative (*cí-kit-sa-ti* 'wants to be conscious') and intensive (*cé-kit-e* 'highly/ repeatedly conscious'). Although some traces of the one or other of these aspects are found in the other IE branches (e.g. Gk

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i) *dé-ō* (and redupl *didé-mi*) 'bind' (=S *dā* > *dyati*) : **dé-ma** 'band, rope'; *de-s-is* 'the binding together', *de-s-ma, -s-mós* 'bond'; *(dia-)dé-ma* 'band around hair'; *de-téo/ -tó-* 'what should be bound'. (No **do**-*smós* m here, as we might expect from the rule in §15, above.)

ii) *zé-ō* 'boil' (=S *yas-yati*): *zé-ma* 'fermentation, decoction'; *zé-s-is* 'the boiling'; *ze-s-tó-* 'boiled, hot'.

iii) **ké** -*o* / *kei-ō* (thought to be desiderative of *keî-mai* 'lie down' =S *śī* > *śete/ śayate*): **koi-t** -*ázō* 'put to bed', *koît-+/-t-os* 'bed', *koi-t-ón* 'bed-chamber'.

iv) **né** -*o* (*ná-ō* 'flow') 'swim, float' (?= S √*nu* > *navate/nauti* 'move'): **naũ**s 'ship' (= S *nau-s*) and deriv(ative)s from stems *nā-/ne-/nē-/nau-* ; *nau-t* -*eía* 'naval matters', -*t-ēs* 'sailor', -*t-i-* deriv(ative)s pertaining to 'naval'; *neũ-s-is* 'swimming'.

v) *plé-ō* (*pleî-/plón-ō*) 'sail' (=S √*plu* > *plavate*) : **pleũ**-*s-is* (very late) 'sailing'; **plo**-*í zō* 'sail on sea'; *plō-ás* 'what is floating about'; *pl ó-í zō* 'sail', -*(s)i-mo-* 'fit for sailing'; *plō-t-ér* 'sailor, floater', -*t-archos* 'shipmaster', -*t-is* 'lifebelt', etc.

vi) *pné-ō* (*pneî-ō-*) 'blow, breathe': *pneũ-ma* 'blast, air' and derivs; *pneũ-s-is* and derivs from *pneus-*; **pno** -*é, pnoi* -*á* 'blast, breeze, breath'.

vii) *rhé-ō* (*rhei-ō*) 'flow' (=S √*sru* > *sravati/si-sar-ti*): *rheũ* -*ma* 'current' and derivs (cf 'rheumatism'I); *rheũ-s-is* 'flowing' (very late); *rho- é, -os* (Cypriot *rho-F-os*; Attic *rhous*) 'stream'; *rhú* -*ax* 'stream, torrent, -*as* (adj) 'fluid'.

viii) *ché-ō* 'pour' (=S *hū* > *juhoti*): *cheũ* -*ma* 'stream, flow'; *cho-é* 'pouring, libation' and compounds; *cho-eús, -ós, choũ* -*s* 'soil, earth'; *cho-á-nē-, ch -é-nē-* 'melting pot'; **chú**-*dēn* 'in floods', -*daîo-* 'poured in floods, vulgar'; *chu-lós* 'juice' (> 'chyle, chylific'I); **chu-ma** 'the fluid', -*meia* 'melting alloys', -*mós* 'juice'; *chú-(n)nō* 'pour' (late); *chū-s-is* 'shedding'; *chú-t-ēs* 'metal-caster'; *chu-t-lázō* 'anoint, -lon* 'liquid'; *chu-t-ó-* 'poured, flowing'; *chutra/-tros* (also **kú-thra**) 'earthen pot'; *chutreús* potter. Also *ko-chu/-déō/-zō* 'stream forth' (? intensive with redupl).

potaomai frequentative or intensive of *petomai* 'I fly' and *gen-ná-ō*, 'beget' causal of *gi-gno-mai* 'be born, become'), these languages seem that much poorer for not having them in the full measure of Sanskrit.

30. The concept of the root and of the organic coherence of a language implies, of course, as has been evident in the preceding discussion, the presence of terminations for nouns and verbs, of suffixes, prefixes and affixes of various kinds. It is obvious, for example, that different terminations for the verb signify active or middle voice (*parasmai-* and *ātmanepada*), different moods and different persons; or that the prefix *a-* (augment) signifies past tense (*á-cet-* 'did, was-doing, perceiving'). It is also obvious that affixes for noun-stems signify the nature of the noun – whether it denotes an agent (*bhar-tṛ* 'bearer'), an abstraction (*bhṛti* 'the notion of bearing'), an action (*bharaṇa* 'bearing'), etc. These are well known aspects.

31. The concepts of root and of the organic coherence illuminate another aspect of comparative studies, one little noticed in the numerous publications. There are many words in the IE languages that have no obvious derivation from and cannot be linked to a root. I take two very common examples the cognate stems of which are to be found in all IE stocks, except Hittite and Celtic: 'daughter' and 'son'. The two are, in a sense, orphaned, without parentage, as it were, in all the branches, except Sanskrit.

Thus 'daughter' appears in Arm *dustr*, Gk *thugátēr*, OItal *futir*, Gth *dáuhtar*, etc. But, despite intensive searches, in no language is found a root or verb-stem to connect with this word. Only Sanskrit has the root *duh* from which not only *duh-i-tṛ* 'daughter (milk-maid)' but also several other nouns (*dugha* 'cow', *duh* 'milking, granting', *doha* 'the milking, milk', etc.) and a fully conjugated verb (*dogdhi* 'milks', *duhīyāt* 'may one milk', *du-doha* 'one has milked' etc.). Similar formations are found with √*aś* 'eat' > *aś-i-tṛ* 'eater', √*grah* 'seize', *grah-ī-tṛ* 'seizer', √*pū* 'purify' > *pav-ĭ-tṛ*

'purifier', etc. (Two more feminines, *mātṛ.*'mother' and *svasṛ* 'sister' are inflected like the masculines *pitṛ, bhrātṛ* 'brother'.) Some remotely possible cognates in other IE stocks have been proposed, like Gk *tugh-ánō* 'occur', Olr *dūal* 'suitable', Gth *dáng* 'useful', etc. but all are uncertain (Mayrhofer, under *dogdhi*).

The noun *sav-i-tṛ* 'impeller, begetter, sun' is another such formation from √*sū* (in *Dhātupaṭha: prasavaiśvaryayoḥ* 'generation and dominion'). But √*sū* gives also *sūnu* 'son'. This stem too is common to most IE stocks: Av *hunu*, OSl *syn*, Lith *sūnus*, Gm *sun-* and Gk *hu-iós* and TochB *soy-*. Here too Sanskrit has a fully developed verb *suvati/sūte* 'vivifies, begets' and numerous other derivative nouns apart from *savitṛ. sava* 'stimulator, impulse', *sūti* 'production, etc. The noun *sū-nu* is a normal formation with *-nu*, as √*gṛdh* 'be greedy' >*gṛdh-nu* 'eager', √*bhā* 'shine'>*bhā-nu* 'shiner, sun', *viṣ-ṇu* etc. Some IE branches have a cognate verb but with different meaning: Av *hunā'ti* 'seeks to obtain, prompts'; Ht *šuṇāi* 'push, press' (perhaps cognate with S √*su* 'pressing'), Lith *su-k-ti* 'turn'. Old Irish has the verb *so(a)id* 'turn, twist' and the noun *suth* 'birth' but not a cognate for 'son'. Greek, again, has no other cognate and although it has the corresponding suffix *-nu-s*, as in *thrē-nus* 'footstool', *lig-nus* 'murky fire' (>lignite), it has only the decayed form *hu-i-os*.

One could cite more examples. The common stem for 'foot' is in Sanskrit *pā̆d-* (=that which falls down) and is linked with √*pad*>*padyate* 'falls (down), goes'. But while some IE branches have the cognate stem for the noun (Gk *pous/pod-*, L *pēs/ped-*, Gth *fōt-us* and Ht *pata-*) but not the verb, only three have something of the verb (OE *ge-fetan* 'fallen', OSl *padǫ/ pasti* 'fall' and TochB *pāt-k*). We find a similar situation with S √*man*>*man-u* 'man, thinker', √*mū̆ṣ,*>*mūṣ-aka* 'mouse, stealer', etc.

32. From these last considerations apart from anything else, we must conclude that Sanskrit is older and closer to PIE than any other branch.

In a paper published in the *Journal of Indo-European Studies* where I examined the cognate names of deities and some mythological themes in IE languages, I wrote: "no major mythological (or religious) feature appears in two or more branches to the exclusion of the Vedic. On the contrary, feature after feature appears in the *RV* in common with one or two other branches to the exclusion of the others – sometimes with the Greek and the Roman, sometimes with the Roman and the Celtic and so on... I do not consider [IE] traditions other than the Vedic as very reliable and would not draw definite conclusions from them unless the issue is attested in the Veda... I would concur with... ideas for the PIE period only if they were present in the Veda too" (2001: 285, 288). Meillet (1908, and many another subsequently) gave as PIE several words in Latin, Germanic etc., but not in Vedic; but many of those can be linked with Vedic words and those that cannot, should be held suspect as coming from non-IE languages.

I hold the same for linguistic matters and add that, since the Vedic tradition has preserved so much more in comparison with the others, a feature present in Sanskrit only (and absent in the other IE branches) does not automatically and necessarily mean that it must be rejected or held suspect as a loan from other, non-IE stocks (e.g. the cerebrals; lexical items in Burrow 1973).

33. In the end, the method of Linguistics, just as of any other discipline or science, entails collection and interpretation of data and the whole process is supported or coloured by assumptions, mostly taken for granted. One of the assumptions is that "my method" is right. But this "right method", which is right in a well defined area, does not take into account a larger area containing the first and an even larger area containing the second and so on: our method is coloured by our belief that we are dealing with the whole, when, in fact, we are not, and therefore cannot arrive at sound knowledge, since sound knowledge can only be knowledge of the whole. For example, the study of an ear separated from the

whole organism, of which it is a member, will doubtless reveal much about the structure and composition of the ear but not much about its true nature which involves its function in the whole organism. Another assumption is that the measurable and everchanging material world is the only reality and that anything not amenable to measurement by our senses cannot be the subject of objective or "scientific" inquiry. But, in fact, the ultimate observer, the ultimate consciousness/awareness which observes or has cognisance of all bodily and mental movements, including the measuring, evaluating and concluding and all thinking, is itself not subject to scientific enquiry since it is the ultimate observer and is in no way observable or measurable by the senses or any of the most advanced instruments.

The study of Language cannot be divorced from that of the ultimate or essential nature of Man. The assumptions about the latter will inevitably colour the study of the former. The general view today, the "scientific view", is that Man, *homo sapiens sapiens*, has "evolved" from some ape-like creature by the processes of natural selection and random mutations and that consciousness and language arose more or less accidentally. This is no more than a belief based on the interpretation of certain data consisting of very few fragments of fossils and bones: it is not something "scientifically observable/demonstrable". The molecular biology and biotechnology which are supposed to be "scientifically observable" are in fact just as insecure (Gibbons 2001: 1052; also Brooks 2001: 410-411). Another "belief" holds that Man

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[11] The bibliography has increased enormously in recent years. For a recent overview of evolution see Gribbin and Cherfas 2003 (who at one point express doubts about the Darwinian theory). For the creationist view see Cremo 2003. Just as there are different evolutionary theories (=neo-Darwinist views) so there are varieties of creationism. One of the latter is the much more plausibly "scientific" movement known as "intelligent design", as contrasted with the blind necessity and chance of neo-Darwinism (Dembski ed 1998).

issued from the substance of the Supreme Being (=God, Absolute) but lost his initial perfection descending gradually to a lower state[11]: this is termed the "creationist view" (or one variety) by the adherents of the "scientific view". Following certain religious, mythological and philosophical traditions, the "creationist view", putting spirit above matter, says that this creation-process repeats itself in cycles. The "scientific view" adopts the rectilinear view of Judaeo-Christian theology (but without the theology itself, i.e. without God) that the world appeared once and has been "evolving" ever since and that man emerged at one point in time – once only, at a date which changes every few decades according to the palaeontological finds, i.e. about 40000, 80000, 100000 and now about 150000 BP. In this view Language itself "evolved" out of animal grunts and bird twitterings after the vocal machinery and brain structure became sufficiently and fittingly developed (Hawkins and Gell-Mann 1992: 21-83).

34. Personally, I know nothing of Man's origin – how and when he appeared on this planet; and I do not think palaeontologists and kindred scientists know either. I incline towards the Vedic Tradition which holds that man is engendered from the Supreme Being and has for his real Self the substance or spirit of that very Being (*ayam ātmā brahma*); also that the process of creation and "evolution" ("devolution" I would say) is cyclical in very long periods called *yugas* and *mahāyugas*; and that human language reflects divine Speech by which all things come to be in the material world. This inclination is not a capricious blind belief. For, quite apart from the ancient mythological statements, in our brief embodiment in this world we can observe many small and large cyclical phenomena like the day and the year, the seasons with their accompanying flowering, fruition and fall, the succession of seed and plant and seed, the development and degeneration of nations and cultures and so on; consequently it is not unreasonable to assume recurrence on the larger scale of solar systems and galaxies – projected and

withdrawn in the rhythmic breathing of the Primal Cause termed *tad-ekam* in *RV* X, 129. As for the immense power of language one has only to consider a common gross example: the President or Prime-minister of a country gives an order and, upon that, hundreds of thousands of people (vehicles, ships and airplanes) move here and there, killing and being killed, destroying and creating. Finally, since the world displays order at every level in the ladder of existence, since different types of creatures on our planet have different degrees of intelligence, with human beings at the top rung, and since something cannot come out of nothing, it is not unreasonable to assume that a Supreme Intelligence (=Being) has been at work from the very start and at all stages – just as a poet conceives and generates a finished poem.

35. The Vedic Tradition regards Speech as a divinity, *Vāk*, from its very beginning, in that remarkable document, the *Ṛgveda*. This goddess Vāk is identified with the holy-power *brāhman* which has four states, the highest being the most silent and most potent. Simple observation shows that, indeed, all forms of spoken or written language come from thoughts, these from some kind of unformulated, perhaps emotional, knowledge and that again from a silence that is full of potency (= roughly *vaikharī*, *madhyamā*, *paśyantī* and *parā*). It is curious that no other IE branch had any linguistic studies (except Plato's *Kratulos* and the subsequent grammatical formulations of the Stoics) and a divinity of Speech.

When Sanskrit appeared in the hymns of the *RV*, it was already a fully developed and highly complex language – but one already suffering attritions and changes (i.e. devolving to simpler forms). Ancient Egyptian too appeared more or less suddenly c3000 BC as a fully developed language – it too having recognisable roots (Gardiner 1957; Watterson 1993). In fact, all the earliest recorded languages were highly developed – Chinese, Mesopotamian, Greek etc. But subsequently they all changed to simpler systems,

streamlining and regularising declensions and conjugations. Sanskrit itself came in later periods to use more and more complex compounds and much less the inflexions leaving unused the rich verbal forms of the rigvedic language – which had already suffered losses. English, again, started as an inflected language but, by about 1500 CE, became uninflected and genderless.

It is therefore difficult to see how or why languages started with animal hisses, grunts and warbles, then became very complex media of thought and communication and then, despite literacy which should have preserved the older forms more easily, they devolved into much simpler forms.

The historical beginnings of Man and Language are unknown. However, taking the Vedic yugas as framework, I propose this hypothesis. In the *Sat-* or *Kṛta-yuga*, when human beings lived in (near) perfection being of one mind (as the ancient accounts tell us), they had no language such as we know. When that unity was lost in a subsequent age, then arose Language in full panoply, as it were, much like goddess Athena springing out of the temple of her father Zeus. "And the whole earth was of one language and of one speech", as the Judaic *Old Testament* has it (*Genesis* 11, 1): with the root as its basis, with all three genders and many more verbal aspects than we know, that language could express every possible nuance of human knowledge and experience. Subsequently that unitary language devolved into different dialects losing some or many of its subtle nuances. One of these branches was what we now term Proto-Indo-European, others being perhaps Semitic (or Afro-Asiatic), Austric etc. These languages again devolved into more branches and so on, down to all modern vernaculars.

Today we have specialised "languages" (=idioms) or "jargons" within any one "official" language. When I read books on Genetics and Biology some time ago, I had to proceed very slowly reading and rereading passages and

consulting relevant dictionaries, almost as in learning a foreign language. The same holds for Linguistics, Law, Physics, etc. Each "discipline" or field of knowledge becomes more and more specialised and "foreign" to the common language. This presumably is inevitable, but one wonders at times if we are not living in a new Tower of Babel.

36. As indicated in previous pages, several aspects of Sanskrit and PIE have not been examined: e.g. sandhi or euphony, which in fact arises naturally from the realities of pronunciation; the musical accent; the nasals; the laryngeals, which have not been mentioned at all; etc. However, the examination of all such phenomena would not furnish much more evidence to help us decide the main issues discussed. Much depends, as was said earlier, on one's basic and total view of human nature and of the world - whether it all is of divine origin and inconceivable intelligence or the result of inexplicable particles and accident and mechanical "evolution".

One may ask finally whether it is possible to reconstruct the PIE language, but this seems to be a wrong question. For even if scholars managed this (which I doubt) there are no possible means of verification. Even if tablets with genuine PIE texts were discovered, scholars would compare their language with their own latest reconstructions and would accept it as PIE only if it agreed; otherwise they would look upon it as yet another stock of PIE and perhaps would proceed to revise (some of) their reconstructions.

A more pertinent question might be – "Is there some practical purpose for reconstructing PIE"? I do not know. I would learn another language only if I thought it desirable to communicate with people who speak it or to read the literature written in it. PIE fits neither. Personally, I think this and other reconstructions of Proto-languages are signs of the Tower of Babel. But, on the other hand, human beings are very different and have different values, feelings and desires.

2. Coherence and Preservation in Sanskrit

1. Argument. This paper examines more than 400 Indo-European lexical items denoting, as far as possible invariable things, qualities and activities (bodily parts, relations and actions like breathing, dressing, rising etc). Sanskrit appears to have lost far fewer items and preserves much greater inner organic coherence than the other branches. This supports the general idea that Sanskrit is much closer to Proto-Indo-European and that, since this could happen only in sedentary conditions, the Indoaryan speakers of Sanskrit did not move (much) from the original homeland. Moreover, the criticism that this conclusion does not take into account the large literature in Sanskrit is shown to be fallacious.

2. Introductory In 2003 I published a small collection of words denoting "invariable" items (to be explained shortly). This was in response to J. P. Mallory's charge (2002) that I was being 'unscientific' in claiming that since the Vedic Tradition retained many more theonyms (see Kazanas 2001; 2005) and other linguistic and cultural aspects of proven Indoeuropean provenance, it had moved very little, if at all, and in any case the Indoaryans were indigenous from the beginning of the 5th millennium at least (Kazanas 2002). This I called the P(reservation) P(rinciple). Mallory (2002) argued that if the Indoaryans had preserved most because they had not moved (much) then the Iranians who were very close to them in the west should have the second biggest stock of retentions, while the Celts (Ireland), and the Norsemen (Iceland) should have

the least having moved most of all. I had not implied that losses were directly proportional to distance away from the proposed homeland and I had explicitly stated that such calculations are not valid (Kazanas 2003) but this was ignored. Mallory further adduced the indices of Gamkrelidge and Ivanov (1995) showing that Greek had 2441 retentions, Baltic 2376 and Indo-Iranian 2139: thus Sanskrit was, in fact, third in preservations. Taking Mallory at his word, I did not think then to check these figures. Instead I examined 50 words, nouns and verbs, denoting things like head, mouth, etc, and actions like begetting, breathing, dressing etc, all of which remain constant however much social conditions change. I abandoned several problematic cases and the stems that were common to all branches and was left with 26. Of these 26, S[1] lacks 3, Gk 10 and B 16. I put these finds in my paper "Final Reply", kindly published by the *Journal of Indo-European Studies*, 2003, of which Mallory is the editor.

3. More than a year later I had to consult Gamkrelidge and Ivanov's book. I looked then at the indices only to discover that the figures Mallory had given were utterly wrong. They were right as sum-totals but many words were duplicated, given in, say the gen, voc, etc, sometimes repeated as many as five times! I wrote to Mallory warning him of those misleading and unacceptable figures. We exchanged some email messages on the subject and eventually (Nov 2004) he cited M. Swadesh and his 100 "basic words", where the Indic branch has 82, Italic also 82, Gk 80, (Irn 76,) Gm 75, B 71, C 64 and the others below 50%: here again S does not have most retentions. I knew of Swadesh's work in Glottochronology (i.e. how fast words wear out or disappear and so a language changes) and that the whole subject is now thoroughly discredited. In any event, these numbers do not tally at all with the figures I had obtained in my small test and the general feel I had of the languages. So I began new research.

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[1] S = Sanskrit (and Vedic)

4. Mallory had added: " I believe basically that we will find the greatest conservatism/retention among those languages that are earlier attested and have the largest vocabularies i.e. Vedic, Greek and Latin". Presumably, this prediction is thought to be more "scientific".[2] But as the results show, the prediction is quite wrong. Of 404 significant words examined, S lacks 53, Gm 145, Gk 149, B 185, L (=Italic) 207, C 210, Sl 215. Although Gm has a comparatively late attestation and a comparatively smaller literature, it is just before Gk and way ahead of Italic both of which have an early attestation and an enormous literature. The matter will be discussed at length below.

Another interesting aspect is the low percentage retained by the Slavic people. The Slavs may not have moved quite as far from Saptasindhu (assuming this was the PIE homeland) as the Irish and Norsemen, but they did move very considerably back and forth in the regions they now occupy, i.e Poland, Czech Republic, Slovakia, the Balkans etc, and the vast expanse of European Russia. In contrast, the Old Norsemen remained in Scandinavia for many centuries until a contingent sailed in a very short time to Iceland in the 9th cent CE (during

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[2] What is scientific? Everybody loves to use the term but I can't help wondering about its use. Telepathy is a well established phenomenon frequently occurring between twins and sometimes between a mother and her child(ren) or, more seldom, between other persons. Yet, at present, there are no scientific means to verify it, other than ordinary observation and common sense or reason. A modern scientist, J. M. Schwartz, an American neurophysiologist, wrote of "the cult of scientism" as "the fallacy of believing that the method of science must be used on all forms of experience and, given time, will settle every issue" (2002: 6). Five decades earlier another American scientist wrote: "expressions such as 'scientific truth' should only be taken in a very limited sense... There is no scientific truth in the absolute sense. The phrase *Ad veritatem per scientiam* [=To truth by means of science] is an absurdity" (du Noüy 1949: 23). Again: "Physicist Wolfgang Pauli once put it that scientists went too far in the seventeenth century when they attempted to make everything understandable strictly as objective science. By denuding the subjective view from any firm ground, much was lost": a contemporary physicist (Wolf 2001: 6).

the oppressive reign of Harold Haarfagr). The Celts too kept moving across Europe, then to the British Isles and finally to Ireland (some even to Iceland, long before the Norsemen). So movement does play a significant role in lexical retentions. But it is not a simplistic equation '*farther distance from homeland, bigger losses*'. Once people move, many other factors come into play. The people themselves may be more or less retentive or they may want to reject completely the culture at home; then, they may go through many vicissitudes the worst being subjugation; in any case, as they meander about, they may find other cultures much more attractive and surrender to them completely – as the Vikings did in N-W France (Normandy)or in Kiev, where they had set up their own kingdom.

However it is interesting that Mallory shifted somewhat his position. Although he continued to abjure vigorously lexical

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In any case, the scientific method like every successful method in any human enterprise requires three ingredients: interest, observation and reasoning. Interest directs attention to the particular field and keeps it there against all difficulties. Observation collects data related to the subject under research. Reasoning discriminates between relevant and irrelevant, accurate and inaccurate premises and data and so arrives at (correct) conclusion(s) (Beveridge 1968). This holds for every discipline in the sciences and arts. The fact that a science like molecular biology uses many and complex instruments does not alter the three basic aspects common to all human enquiry. Because of faulty reasoning or inadequate observations, scientists make as many and big mistakes despite their instruments (Cohen 2001: 32-34) as investigators in other fields. Furthermore, insight or inspiration and luck, all of which are out of one's control, play important part in sciences (Beveridge, 27ff, 68ff) no less than in the humanities.

Some more on science and mainstream views. An eminent biochemist, Dr C. B. Pert, writes: "Do not accept the conventional [=mainstream] wisdom. Do not accept the idea that something can't be accomplished because the scientific literature says it can't... Don't depend on the literature – it could be right or it could be wrong. Spread all your hunches before you..." (2002: 40). The AIT is the backbone of "conventional wisdom" in Indology. Once you examine the "evidence" you find it is "thin" or "hot air:" there is not a scrap of solid evidence for it (Kazanas 2001b, 2002).

counts as unscientific, he was now trying to show that S does not have most retentions. He wrote that according to the Swadesh counts, Indic is at the top "but it is sharing first place with a language [i.e. Italic] that was not seriously attested for about 1000 years later ... and is quite a distance from its putative homeland in India". This means that he takes my PP a little more seriously. But I must observe that here he slips dangerously. Italic is attested by 500 BC and more seriously c 300. Greek is attested c 650 in epigraphies across the country and more "seriously" by 550 when Homer is thought to have been put in writing by Peisistratos. According to the A(ryan) I(nvasion / Immigration) T(heory), the *RV* was composed c 1200 BC. But there is no attestation of a written *RV* before the 14th cent CE (with Sāyana's commentary), if then ! The first IE writing in India is Aśoka's *prākṛta* (not Vedic/Sanskrit) Rock Inscriptions after 300 BC but manuscripts survive "seriously" only after the 14th cent CE. So in no way is the Vedic Tradition favoured by writing. These facts were spelled out in the paper published (2003) in the *Journal of Indo-European Studies*.

5. Leaving aside the fact that mainstream scholars (Swadesh and Mallory and just about everybody else) are under the spell of the AIT, there are two serious difficulties with past counts, apart from the wretched AIT which has, since the second half of the 19th cent, coloured every aspect of Indology and IE studies but scholars do not take this into account. The other two difficulties are linguistic.

First, some stems are arbitrary and need not be PIE even though they are found in two or more IE branches. As was observed early in the 20th cent (Bloomfield 1933; see also §9, below) a word is not valid if it is found **only** within the Italic or Romance languages (Latin, Oscan, Umbrian, Italian, French, Spanish, Rumanian, etc) or the Germanic family (Gothic, Old Norse, Old English, Old High German, etc) or Slavic (Old Church Slavonic or Old Bulgarian, Russian, Serbo-Croatian, etc). Even when a cognate stem is found in altogether different branches like, say, Greek and Baltic, it is not necessarily PIE:

e.g. Gk *daimōn* and Lith *demonas*, where the Lith word is borrowed from Gk (also in L and other branches).

Then, Italian *giardino*, French *jardin* and Spanish *jardin*, all 'garden', come from OHG *garto*. Similarly ON *mūrr,* OE *mur*(rare) and OHG *mūra* come from L *mūrus*(older *moerus*). Another difficulty related to this is that a stem occurring in a branch in a form not easily recognisable may be missed. A. Meillet, e.g., listed many words occurring in the languages of N-W Europe exclusive of Sanskrit, but, while he mentions several only to reject them as invalid, he includes L *homo* 'man' and L *vas* (gen sing *vadis)* 'pledge' (1922) without mentioning that the first is connected with S *kṣam* 'earth' and the second probably with S *vad* 'speak'. (For more, see §9.)

6. Variables and invariables. The second difficulty is that very many words in the total vocabulary of a language denote things that are *variable.* If the people move to a different, distant region, or if social conditions change, these terms may well change. This aspect was well-described by P. Thieme (1953). But there are also *non-variables.* I use the terms in a relative sense, of course. For instance pots are made from different substances (clay, wood, metal, etc) and in different shapes (bowl, jug, pitcher, urn, etc); the words describing them can over a long period change in meaning and the word for 'jug' may come to denote an 'urn' or vice-versa. An ear on the other hand, remains an ear without the danger of changing like a pot. Now, there is a difference between "variable" and "basic" vocabulary. Swadesh chose initially 200 *basic* words but later reduced them to a 100. Basic items are not necessarily invariable. Tea is basic to the English way of life and a kilt is basic to Scotsmen but neither is invariable. Swadesh includes words like 'bark, grease, root, sand, yellow', etc. These may be regarded as 'basic' but although the bark of trees may be used for medicinal purposes, for writing and clothing, it will be so used by specific people in specific conditions (literacy required for writing) and from specific trees; move to a

different area, where no bark is useful and the word will be forgotten or changed. The colour 'yellow' sometimes fades into white and sometimes into green or lemon. Sand is plentiful on beaches and in deserts, but it would hardly be known in central Turkey, in north Greece, in Slovakia or Czech Republic. Then, people might well know bulbous roots, dug up for food or medicine, but would hardly know of the roots of other plants. As for grease, this can come from different substances and have different uses so that different terms may well be ascribed to it.

Consider the case of a common stem denoting six different tools: S *matya* 'harrow, roller'; L *mateola* 'mallet'; Gm *mattoc* 'mattock' & *medela* 'plough'; B *matara* 'pole, rod'; Sl *motyka* 'hammer, hoe'. This, I trust, shows clearly what I mean by "variable". Some comparativists made studies of arboreal terms (and Mallory used this in his criticism of my paper) but these are utterly unreliable. Pines often look like cypress-trees and these like cedars or firs and so on. As one moves from one landscape to another and the vegetation changes, (say from south to north), one may well use a particular name for a tree that is only similar. Studies have been made also for fishes and birds. Here again we find variability. Consider L *juni-perus* 'juniper', Gm *fyrs* 'gorse' and Sl *proso* 'millet'; if the cognation holds, then we have also Arm *her* 'bristle, hair' and S *parṣa* 'sheaf'! Fishes in rivers, lakes and seas are mostly different and fishes in the Baltic are different from those in the Aegean sea or in the Indian Ocean. Thieme and others argued about the salmon (PIE *laks?!) – and trees like the aspen. All these studies are not particularly useful and I disregard them.[3]

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[3] One short old example from A. Meillet should suffice – the tree 'alder': L *alnus*; OHG *elira*; Lith *elksnis*; OSl *jelĭxa*. Even if the cognates could be fully established, we have here only L and North people. This could well be a post-dispersal development. But I don't accept such cognations because they are so dissimilar and I don't see why L and Lith have -**n**- while Lith and OSl have -**k/x**. There are no such regular correspondences.

7. The Method. I decided to examine what would be *as much as possible* stems denoting invariables. Certain close and common relations in society like husband, wife, mother, son and so on would be invariable: these are roles that men and women play in all known societies in all regions. Invariable are also certain properties of the human being that enable him/her to play those roles – mind, intelligence, love, etc. There are also the parts of the human body – and these are probably the most invariable of all: wherever people go, they have a head, arms, feet, blood, heart and the like; we could never, under all normal circumstances, mistake hair for fingers and an eye for an ear or a mouth (though cheeks could be confounded with jaws and the lower jaw with the chin). Then, there are many invariables in all environments where IEs exist: existence itself of multifarious creatures and things and death, the cessation of that existence; sun, moon, stars; day and night; earth, water, fire and wind; cloud, rain and snow; river (or stream) and lake or sea; mountain, field, forest; cold and heat; the tree, its branches and leaves; fruit and seeds; etc. Certain animals also prove to be quite constant: cow, bull, goat, sheep; dog, donkey, horse; bear, fox, wolf; etc. Birds, being more distant, like fishes, are not easily distinguishable. A good example is the bird S *pika* = 'cuckoo'; in L *picus* is 'woodpecker' and so is Gm *specht*; but another L form *pica* is 'magpie' and OPr *pic-le* is 'fieldfare'. The same stem denotes **four** different birds in different languages. Certain qualities (expressed by adjectives) are quite invariable: bright, dark; light, heavy; long, short; old, young; alive, dead; and so on. Invariable in all conditions are, of course, many acts and conditions of man, denoted by verbs: being, breathing, drinking, eating, dressing, sleeping, waking, moving, thinking, remembering, speaking, carrying, cutting, cooking, etc, etc.

I took many of Swadesh's words but also used C D Buck's index (1988) to select invariables (adornment, alive, all, anger,

animal, etc). I gathered over 500 stems and looked them up in Buck, Pokorny (1956), Mann (1984-7, somewhat substandard) and Rix (1998). I also used GEL, Frisk and SGD (Greek), OLD (Latin), MSD and Mayrhofer (Sanskrit). For C, Gm, B and Sl I relied on Buck, Pokorny, Mann and Rix.

8. Since my purpose was to discover which branch had most retentions, or fewest losses, I left out of detailed consideration all stems common to all branches. Now by "all branches" I mean the seven major IE branches: Indic, represented by S; Gk, including all Greek dialects (but not Mcn); L(atin) representing the Italic branch, but also Osc(an) and Umb(rian) if they have a stem where L fails; C(eltic) with all sub-branches from Gaul to Ireland; Gm, covering all the Germanic sub-branches – Gth, ON, OE and OHG; B(altic) for Lith, Ltt and OPr(ussian); S(lavic) including even Polish, Serbian etc. In citing the cognate stems I follow the order S, Gk, L, C, Gm, B, Sl (then Alb, Arm, Ht and Toch A/B). Although Alb, Arm, Ht and Toch AB are not in the race because of their meagre retentions, nonetheless they are cited in many cases for the sake of completeness and in some cases to supply the third or fourth citation that makes a stem eligible as an inherited cognate.

9. Eligibility is determined by the presence of the particular stem in at least three branches. If a stem is found in only two branches it is rejected even if one branch is in the east, say S, and the other in the west, say C. The Avestan, Old Persian and kindred sub-branches of the area are not used because of their closeness to Sanskrit. If S and Av were used as two branches with any other branch as a third, the balance would lean too heavily in favour of S. Av is used in 2-3 cases where S is missing, in order to underline the absence in S. The presence of a stem in two or more sub-branches of one of the main branches counts as one. E.g. the word for a plain or large expanse of ground in Gallic is -*magus*, in Ir *mag*, in Welsh *maes* etc. All these are cognates with S *mahī* 'earth' (and, of

course, the IE common stem for 'great, large' S *mah-/* Gk *meg-/*L *mag-*). However, all the variants in the sub-branches of C count as one. In this instance therefore we have two occurrences, one C and one S. This is not included in the list. Obviously, as was mentioned earlier, loanwords do not count. All European cognates of 'oil' and 'olive(-tree)' come from Gk and L (which borrowed from Gk). Then, the Gm *rik-r/rice* 'rich' meant originally 'mighty' and is thought to derive from C *ri-(g)* . All such cases are ignored. I know that *ceteris paribus* the presence of a correspondence between two geographically remote languages is not likely to be an intrafamilial loan and that the presence of a correspondence in 3 or 4 contiguous languages may well be a common loan (cf Bloomfield 1933: 350-60). However, I allowed the latter situation (say L, C, Gm or C, Gm, B, Sl) to avoid accusations that I favour S or Gk (or anything), and express my doubt in brackets.

Meaning is another criterion. If a cognate stem has in a particular branch a meaning different from that of the others, or from what seems to be closest to original PIE (though here one can never be absolutely certain), then this does not ultimately count. It is taken into account as a cognate and so helps establish the IE nature of the stem, but it is considered as absent and does not count in favour of the branch. A good example is the cogn for 'bird' (196). The stem appears as S *vis/ ves* and L *a-vis,* but a trace of this is found also in the Gk *aiFetos,* 'eagle' and *oiō-nos,* 'augur'. Phonetically the stem is a genuine IE cognate, but I consider Gk not to have the cognate itself; despite the presence of the stem, semantically it is considered absent and so Gk is said to have suffered a loss.

I apply a similar criterion for nominal and verbal stems. If in the examination of a verbal stem found in some branch(es), a cogn stem appears in another branch but only as noun, then the latter does not count for its branch and the branch is considered to have suffered a loss. The same

applies when a noun is being examined and only a verbal stem appears in a particular branch. A good example is 'carpenter, fashioner'. The cognate appears as S *takṣan,* Gk *tektōn* and Sl *tesar.* A cognate vb appears in L as *tex-o,* 'weave, join' and B *tašyti* 'cut, hew' but these do not count: L and B have a loss. Furthermore, Gm has *dehsa(la),* 'axe, chopper' – obviously cogn with S etc, but it is only the instrument, not the agent; so this too doesn't count.

10. As one proceeds in the consultation of the various publications it becomes obvious that all these eminent authorities do not agree among themselves in some cases. Sometimes it is easy to make a decision in favour of one or another. For instance, one lexicographer does not connect C *mligin* with S *mrjati,* 'rub, wipe'. The C and S forms are, for me, very obvious cognates. Other cases are not so simple. For 'hide, skin', some make cognates L *corium,* Sl *skura,* 'pelt' and S *carman.* Others ignore this and see as cognates S *carman* 'hide', OHG *scirm,* 'umbrella', OPr *kērmens* 'body, frame' and Sl *črěmǔ* 'tent'. Although IE phonetic changes often occur according to certain laws within a well defined frame of time and conditions, there are also so many strange unaccountable exceptions that I would not be surprised if all these words turn out to be cognates. I can suppose too that 'skin' could become 'umbrella' or 'tent' (or vice-versa) but can't see why the sound -**sc**- and -**šr**-should be preferable to -**sk**- and -**c**- (or vice-versa). Equally perplexing is the case of the cognates of 'hand': some see Gk *cheir* linked with Alb *dare* and Arm *jern,* others with S *har-* 'take, hold', still others with S *hasta* 'hand' (not *har-*) and yet others only with Ht *keššar.* For the last two options it was necessary for IEL to postulate a (totally imaginary) proto-Greek **chesr –;* this was necessitated only by S *has-ta* and Ht *keššar.* Surely here S *har-* is closer to *cheir* and Ht is either a corrupt form or another stem like *has–ta.* (I would suggest yet another possibility : S *kara* '[the hand as] maker'.) I steer clear of such disagreements.

Apart from the cases mentioned just now, I ignore of necessity all stems where no clear common cognate emerges – always with the criterion formulated in §9, i.e. a stem should appear at least in three of the IE branches. There are many stems that appear in only two branches (sometimes in several sub-branches): adornment, aid, army, battle, blind, cloth as distinct from 'clothing', dance, enemy, friend, forest, happy, hole, island, neighbour, etc, etc. This is surprising. These entities are invariable – except perhaps army and battle. Even in most ancient societies people used some decoration and clothing, they had friends and enemies and neighbours and they saw a hole, or a forest, distinct from the bare plain . Yet a consideration of 'neighbour' shows enormous divergences. Thus, S *prati-/vāsin/ veśin*, 'one who dwells/settles near'; this may be connected with L *vīcīnus;* but not Gk *geiton,* C *comarsa,* Gm *nēaligibūr* etc, B *kaiminš* Sl *susjed* etc. Obviously, our modern views on such social matters are not the same as those of the early IEs.

A third category of stems not recorded here are pronouns and numerals. From my survey of the publications, it became apparent that on the whole these stems were fairly common to all branches. Some numbers like 'twenty' do show important variations or are not so widespread, but nothing significant is lost by these omissions.

11. The List.

I) Parts of the human body. Here stems for several members of our body are common to all branches: eye (S *akṣi,* L *oculus* etc); navel (S *nabhya,* Gm *naba-la,* etc); tooth (S *dant-* , L *dens,* etc); udder (S *ūdh -,* Gk *outh-* , Gm *ūter,* etc); hip/buttock (S *śroṇi,* Gm *hlaun,* etc); etc. Some have no sure common stem: chest, hand (S *hasta* or *hara,* Gk *cheir* and Ht *keššr* are not necessarily cognates as some claim), finger, lip(s). This is surprising since the parts of the body cannot alter in any environmental or social conditions. We must assume then that at different periods and/or places a member like the

'hand' was regarded as something different according to the function it was thought to perform mainly; for the hand does many things: it takes, gives, holds, touches, makes and so on.

1. arm : a) S *bāhu* ; Gk *pēchus* ; Gm *buog* ; Toch AB *poke.* Not L, C, B, Sl.

2. b) S *dos* (fore-arm); C *doë* ; B *pa-duse* (; Sl *paz-duha* 'armpit'). Not Gk, L, Gm.

(The group of cognates S *īrma*, L *armus*, etc denote 'shoulder/forepart of animal', exc Gm *arm* 'arm'!)

3. beard : a) S *bhṛṣṭi* 'bristle, point'; L *barba* ; Gm *bart/beard* ; B *barzda* ; Sl *brada* . Not Gk, C.

4. b) S *śmaśru* ; (L *māla* , *maxilla* 'chin, jaw'; C *smech* 'chin';) B *smakra-* 'chin, beard'; Alb *mjekrei* ; Arm *mauru-k*; Ht *zamangur.* Not Gk, L, C, Gm, Sl.

5. belly : S *udara* ; Gk *hoderos* (=*gastēr* 'belly' Hes); L (*venter?*) *uterus*; B *vēderas.* Not C, Gm, Sl.

6. blood : S *asṛk* ; Gk *ear*; L *as(s)er* ; B *asius* ; Ht *eešr-ḫar*; Toch A *ysār.* Not C, Gm, Sl.

7. body : S *kṛp* (and 'appearance'); L *corpus* ; Gm *href.* No Gk, L, C, B, Sl.

8. bone : S *asthi* (gen °*thnas*); Gk *osteon*; L *os(s)-* ; Alb *ašt*; Ht *hastai.* Not C, Gm, B, Sl.

9. ear : a) Gk *ous* ; L *auris* ; C *au* ; Gm *eare* ; B *ausis* ; Sl *ucho.* Not S!

10. b) S *śrotra* ; C *clua-/clyst*; Gm *hlyst* (and *hliu-ma* 'hearing') hearing. Not Gk, L, B, Sl.

11. elbow: S *aratni* ; Gk *ōl(l)en-* ; L *ulna* ; Gm *elina* ; Sl *aršin.* Not C and B.

12. eye brow : S *bhru* ; Gk *o-phrus* ; C *brūad* ; Gm *brūn* ; B *bruvis* ; Toch A *pārwān* , B *pārwāne.* Not L, Sl.

13. face : S *an/prati+īka* ; Gk *pros-ōp-on* ; C *en-ech.* Not L, Gm, B, Sl.

14. female breast : S *stana* ; Gk *stēnion* (=*stēthos*, Hes); Gm *spane* , etc; Arm *stin* . Not L, C, B, Sl.

15. flesh : S *māṃsa*; Gm *mimz*; B *mesa*; (O Pr *mensā*;) Sl *mesa*; Alb *mish*; Arm *mis*; Toch B *misa.* Not Gk, L, C.

16. foot : S *pād-* ; Gk *pous>pod-*, L *.pēs>ped-*, Gm *fōt/ fuoz*; (B *pada-* 'foot-wear';) Ht *pata-*; Toch AB *pe/pai* . Not C, B, Sl.

17. hair : a) Gk *ianthos* ; C *find(a)* ; Gm *wint-brawa* 'hair-brow (=eyebrow, eyelash)'. Not S, L, B, Sl. (doubtful PIE)

18. b) S *roma(n)* ; Ir *ruaim-neach* ; Gm *rogg* (so several scholars); Sl *runo* 'fleece'. Not Gk, L, B.

19. head : a) S *śiras* ; Gk *kara*, etc; C *ker-n* 'top of head' (; L *cere-brum* 'brain', *cernuus* 'head-first'; Gm *hirni* 'brain'). Not L, Gm, B, Sl.

20. b) S *kapāla* 'skull, cup' (cf L *capis* 'cup'); L *caput* ; Gm *hefuð*, *hafola*, etc. Not Gk (*kephalē*?), C, B, Sl.

21. heel : S *parṣṇi* ; Gk *pternē* ; L *perna* ; Gm *fiersn* ; Ht *parsna-* . Not C, B, Sl.

22. jaw : S *hanu* ; Gk *genus* ; C *gen* ; Gm *cin/kin* ; B *žan-das(?)* ; Toch A *śanwem* (f. dual). Not L, Sl.

23. knee : S *jānu* ; Gk *gonu* ; L *genu* ; Gm *kniu.* Not C, B, Sl.

24. liver : S *yakṛt* (gen °*knas*); Gk *hēpar* (gen °*patos*); L *iecur*, B *jaknos.* Not C, Gm, Sl.

25. marrow : S *majjā* ; Gm *mar(a)g* ; Sl *mozzŭ* 'brains'; Toch A *māśśunt.* Not Gk, L, C, B.

26. mouth : S *ās-* ; L *oas* ; C *ā* (; Gm *ōss* 'rivermouth'). Not Gk, Gm, B, Sl.

27. nail : S *nakha* ; Gk *onux* ; L *unquis* ; B *nag(a)s.* Not C, Gm, Sl.

28. neck : a) L *collum*; Gm *hals*; B *kaklas*; Not S, Gk, C, Sl where the stem denotes 'circle' (S *cakra*, Gk *kuklos*, etc).

29. b) S *manyā*; (L *monīle* necklace;) C *muin(ē)* (; Gm *men(e)* 'necklace', *mana* 'mane'). Not Gk, L, Gm, B, Sl.

30. c) S *grīvā* ; Gk *derϜā* (Arcadian), *derē* ; B *grīva* 'river-mouth'(; Sl *griva* 'mane'). Not L, C, Gm, B, Sl.

31. nose : S *nas-* ; L *nāris* ; Gm *nasa* ; B *nosis* ; Sl *nosĭ.* Not Gk, C.

32. palm of hand : S *pṛtha* ; Gk *palamē* ; L *palma* ; Ht *pal-tana.* Not C, Gm, B, Sl.

33. penis : S *pasas* ; Gk *peos* ; L *pēnis* (*pes-ni-*); Gm *fasal.* Not C, B, Sl.

34. shoulder : S *aṃsa* ; Gk *ōmos* ; L *ume-rus* ; Gm *ams* ; Arm *us.* Not C, B, Sl.

35. sinew, tendon : S *snāvan,* Gk *neuron*; L *nervos*; Gm *snuor,* B *snawara* ; Arm *neards* . Not C, Sl.

36. spleen° : S *plīhan-*; Gk *splēn* ; L *liēu*; Arm *plaicaln*; etc; all exc Gm.

37. testicle : Av *ərəzi* (dual); Gk *orchis,* C *virige*; (B *erzilas* 'ungelded horse';), Alb *herde*; Arm *orjik.* Not S, L, Gm, B, Sl.

38. throat : S *gala*; L *gula*; Gm *ceole* ; B *ger-kle* ; Sl *grūlo.* Not Gk, C.

39. tongue : S *jihvā* ; OL *dingua* ; C *teng(e)*; Gm *tuggo* ; B *liežuvis* ; S *jezykŭ* ; Arm *lezu* ; Toch *känto.* Not Gk.

40. tooth, molar : S *jambha* ; Gk *gomphos* ; Sl *zebŭ* ; Alb *dhëmb* ; Toch AB *kam/keme.* Not L, C, Gm, B.

II) Man's properties and conditions. Here we examine cognates of man's properties or attributes. Very few properties like 'name' (S *nāma,* L *nomen,* etc) and 'thirst' (S *tṛṣ(ṇ)ā,* C *tart,* etc) have common cognates in all seven branches.

41. anger, envy : S *īrṣyā* ; Gk *arē* 'ruination', *areiē* 'invective'; (L *errare* 'err';) Gm *irre, rasen* 'rage'; B *aršu-* 'violence'; Arm *her* 'rage'; Ht *arsani-* 'envy'. Not L, C, Sl.

42. anxiety : S *aṃhas*; Gk *agchos, achos* ; L *angor, anxietas* ; Gm *ang(u)st* ; Sl *qzos-tŭ* . Not C, B.

43. care, consideration : S *smaraṇa, smṛti* (and 'memory'); Gk *merimna* ; (L *memor* 'remembering';) Arm *mormok.* Not L, C, Gm, B, Sl.

44. debt : C *dlig/dyl-ed* ; Gm *dulgs* ; Sl *dlŭgŭ.* Not S, Gk, L, B. (Not PIE probably.)

45. desire, love : S *lobha* 'longing, greed'; L *lu-/li-bido* 'desire, pleasure'; Gm *lufu/liubi* 'love'; Sl *ljubi.* Not Gk, C, B. (There are many other stems for this but all diverse.)

46. dominance : C *flāith* 'sovereignty'; Gm *waldan*; B *valdan* ; Sl *vlada.* Not S, Gk, L.

47. energy, force : S *vayas* ; Gk *is* ; L *vi-res* (pl). Not C, Gm, B, Sl.

48. fear : S *bhaya/bhīti* ; (Gm vbs *beofian, biben* ;) B *buime/buile* ; Sl *boja-zni*. Not Gk, L, C, Gm.

49. guilt : S *āgas* ; Gk *(h)agos* (and 'pollution'); Gm *œce* (vb *acan*) 'pain, wrong'. Not L, C, B, Sl.

50. life(-time) : S *āyus* ; Gk *aiōn* (and 'vital power'); L *aevum* ; Alb *eshë* ; Toch A *āym.* Not C, Gm (but *aiws* 'time, eternity'), B, Sl.

51. mind : S *manas*; L *mens,* °*ntis*; C *men-me*; Gm *munr* (ON), *myne* (OE: 'desire' and sometimes 'mind'; cf Goth *muns* 'thought, intention'). Not Gk, B and Sl. (Interestingly the Greek cogn *menos* means 'might, force' showing that the Greeks took only this quality for the stem that originally denoted 'mind' believing that might came from mind?)

52. power, prevalence : S √*sah* n, vb; Gk *isch-* 'power', *e(s)chō* 'possess'; Gm *sig-e/or* 'victory'. Not L, C, B, Sl

53. reward : S *mīdha*; Gk *misthos* ; Gm *mizdō* ; Sl *mĭzdha* . Not L, C, B.

54. toil, tiredness : S √*śam* ; Gk *kam-* toil', *a-kama-* 'tireless'; C *cuma* 'grief'. Not L, Gm, B, Sl.

55. vehemence : S *ūrj-ā* ; Gk *orgē* (and 'fury'); C *ferc* 'anger'. Not L, Gm, B, Sl.

III) Human relations. Here all the closest ones (father, mother, etc (appear in almost all the branches except Ht which has none! Surprisingly, on the other hand, we find no sure cognates for 'compatriot, enemy, friend, guest, neighbour, stranger' and many others. At that early period, it seems people had different ideas about such social relations.

56. brother : S *bhrātṛ*; etc; in all exc Gk (*phratēr* only as a member of 'brotherhood' *phratria*) and Ht.

57. chief, king : S *rāj-* ; L *rex, regius* ; C *rī(-x)* . Not Gk, Gm, B, Sl.

58. child, son : S *putra* ; (Gk *pōlos* 'foal'); L *puer* (*pullus* 'young animal'; B *putytis* 'chicken'; Sl *pta-k* 'bird'). Not Gk, C, Gm, B, Sl.

59. carpenter, fashioner : S *takṣan-* ; Gk *tektōn* ; (L *tex-* 'weave, fit, plait; Gm *dehsa* 'axe';) Sl *tesar* (vb *tesati* and B *tašyuti* 'cut, hew'). Not L, C, Gm, B.

60. clan/tribe : S *jana/jāti* (<√*jan*); Gk *genos* (*phulē*); L *gēns* (*tribus*); Gm *kyn/cyn(n)* . Not C, B and Sl.

61. companion : S *sakhā* ; L *socius* 'common'; Gm *seggr* (ON); Arm and Iran *ašakert* 'disciple, follower'. Not Gk, L, C, B, Sl.

62. daughter : S *duhitṛ*; etc; for the Italic branch Osc *futir* ; the cogn is not in C and Ht.

63. daughter-in-law : S *snuṣā* ; Gk *nuos* ; L *nurus* ; Gm *snur* ; Sl *snŭcha* ; Arm *nu*. Not C, B (and Ht).

64. father : S *pitṛ*; Gk *patēr*; L *pater*, C *athir* ; Gm *fadar*. Not B, Sl and Ht.

65. fortified community : S *pur-*; Gk *(akro-)polis*; B *pilis/ pils* . Not L, C, Gm, Sl.

66. husband/master : S *pati* ; Gk *posis* ; (L *potis* 'capable' only;) Gm *–faps* (Gth); B *pats* ; Sl *–podĭ*. Not L and C.

67. husbands' brother : S *devṛ* ; Gk *daēr* ; etc; in all exc C (and Ht).

68. inspired one, poet : S *api-vatat-* 'one understanding'; L *vates* ; C *fáith* ; Gm *wōd* 'one possessed'. Not Gk, B, Sl.

69. man : a) S *nṛ-/nar-* ; Gk *a-nēr* ; Osc *ner-um* ; C *ner* ; Alb *njer*. Not Gm, B and Sl. Cf also S *sūnara* 'mighty' and Gk *ev-ēnōr* 'vigorous' (where *(enōr* links with *anēr*, giving another stem).

70. b) S *man-u*; Gm *man-n*; Sl *možĭ*; Not Gk, L, C and B.

71. c) L *homō* ; Gm *gum-* ; B *žmogus* ; Toch A/B *šom/ šaum*; Not S, Gk and Sl.

72. d) S *vīra* 'hero'; L *vir-* and Umb *v(e)iro* 'man'; Gm *wair* ; B *vyras*. Not Gk, Sl.

73. mother : S *mātṛ* ; etc; in all, exc B (but *mote* 'wife'), Alb (but *motrë* 'sister') and Ht.

74. people : (S√*tu* > *taviti* 'has authority';) L *totus* 'whole', Osc *touto* 'populace'; C *tuath* ; Gm *þiuda* ; B *tauto*. Not S, Gk, Sl.

75. sage, silent one : S *muni* 'seer, silent' ; Gk *muna-ros* 'silent one' (Hes), *mun-dos* 'mute, silent'; Sl *muňa*(k) 'mute'. Not L, C, Gm, B.

76. settlement : S *ā-śaya* 'place of rest, retreat'; Gk vb *kei-mai* 'lie, rest, settle', *kōmē* village; Gm *haims, heimr* ; B *saime* 'family'. Not L, C, Sl.

77. sister : S *svasṛ* ; etc; in all exc Gk (*eor* 'daughter' in Hes) and Ht.

78. son : S *sūnu* ; Gm *sunu(s)* ; B *sūnus* ; Sl *synŭ* ; in Gk *hui-* and Toch B *soy-* both questionably related being decayed forms. Not Gk, L, C and Ht.

79. son-in-law : S *jāmātṛ* ; Gk *gambros* ; L *gener* (<*gemer?*); B *žentas* ; Sl *zetŭ*. Not C, Gm (and Ht).

80. thief : S *tāyu, stena* ; Gk vb *tētaomai* 'be in want', *teūsios* 'idle'; C *tāid* ; Sl *tatī* ; Ht *tayezzi* 'steals'. Not L, Gm, B.

81. twin : S *yama* ; L *geminus* ; C *emon* ; B *jumis* . Not Gk, Gm, Sl (and Ht).

82. uncle (father's brother) : S *pitṛvya* ; Gk *patrōs* ; L *patruus* ; Gm *fetiro* (and 'cousin'). Not C, B, Sl (and Ht).

83. widow : S *vidhavā* ; L *vidua* ; C *fedh;* etc ; in all exc Gk (and Ht).

84. wife/mistress : Here again one would expect a stem related to no 66. Indeed – S *patnī* ; Gk *potnia* ; B *pati* . Not L, C, Gm and Sl which have mostly disparate stems.

85. woman : now, if the stem for man is *nar/ner*, then it would not be surprising to have a related stem for woman; but only S has this as *nārī* . We find: S *janī* (f of *jana* 'creature, man'*)* also *gnā* 'divine woman'; Gk *gunē* ; Gm *qinō, cwene;* Sl *žena* ; Arm *kin* . Not L, C and B.

IV) Environment Natural Here again several stems are common to all branches: 'light' (S *ruc*, L *lux* etc); *earth* (S *kṣam-*, Gk *chthōn* , etc, but **not Gm**, where *guma* = man); month (S *mās,* Gk *mēn* etc); snow (L *nix,* Gm *sneo* , etc, but **not S**, where *sneha* 'sticky substance, love'); night (Gk *nux,* L *nox* , etc); dawn (S *uṣās* , B *ausra* , etc); sun (Gk *hel-,* L *sol,*

etc but **not Gm**). But again many things have no sure common stem – forest, lake, island, medicine, etc.

86. apple : C *aball, aval* ; Gm *ap(p)el* ; B *?ăt(u)ols* ; Sl (j)*ablŭko*. Not S, Gk, L. (I doubt this is PIE.)

87. ash(es) : S *āsa* ; Gm *as-ca, az-go* ; Arm *ač-cum* ; (cf Sl *oz-diti* 'malt'; Toch A *āsar* 'be dry';). Not in Gk, L, C, B, Sl.

88. being, creature : S *bhūti* ; Gk *phusis* 'nature, essential being'; B *bu(i)tis* 'existence'; Sl *bytŭ* 'being, creature'. Not L, C, Gm.

89. blade, thorn : S *tṛṇa* 'blade, grass'; Gm *þaurnus* ; Sl *trŭnŭ* . Not Gk, L, C, B.

90. bottom : S *budhna* , Gk *puthmēn* ; L *fundus*, Gm *bodam;* Not C, B, Sl.

91. branch : a) S *śakhā*; (C *ceht* 'forked stick, plough'; Gm *hoha* 'plough';) B *śaka*; Sl *socha*; Arm *sax* . Not Gk, L, C, Gm.

92. b) S *vaya* ; (C *ve* 'measuring rod'; Gm *viðir* 'willow';) B *vitys* 'osier'; Sl *věja, větev.* Not Gk, L, C, Gm.

93. cold, frost, winter : S *hima / heman* ; Gk *chime-, -chimo* 'storm, frost', *cheima,* °*mōn* ; L *hiems* ; C *gemrad*; B *žiema* ; Sl *zima* ; Ht *gemi, gimi* 'cold, winter'. Not Gm.

94. cloud, fog : S *megha* ; Gk *o-michlē* ; B *migla* ; Sl *mŭgla* ; Arm *mēg* . Not L, C, Gm.

95. darkness, dust, mist : S *rajas* ; Gk *erebos* ; Gm *rigis ;* Arm *erek* 'evening'. Not L, C, B, Sl.

96. dawn : S *uṣās* ; Gk *ēos* ; L *au[s]rōra* ; (Gm *eōstre* 'goddess of spring', OE;) B *auśra.* Not C, Gm, Sl.

97. day : S *dina* ; L (*dies?*) *nun-dinae* 'ninth/market day'; B *diena* . Not Gk, C, Gm, Sl.

98. death : S *mṛtyu* ; L *mor-s/-tis* (gen); B *mirtis*, Sl *sŭmrŭtŭ.* Not Gk, C, Gm.

99. dust : S *dhuli* ; (L *fuligo* 'rust';) Gm *du(n)st* ; B *dul-is/ kes* ; Sl *dŭždŭ* 'rain'. Not Gk, L, C, Sl.

100. egg : Gk *ōon* ; L *ovum* ; C *og* etc; Gm *egg/ei* ; Sl *aj-ice.* Not S, B.

101. end : S *anta* ; C *et* ; Gm *ende* ; Ht *ḫa-anza* . Not Gk, L, B, Sl.

102. excrement : S *gūtha* ; Gm *quāt* ; Sl *govno* ; Arm *ku*. Not Gk, L, C, B.

103. expansion, swelling : S *puṣ-* ; Gk *phusa* 'pustule'; L *pus-tula* 'swelling'; Sl *pyš-nyj* 'laxuriant'. Not C, Gm, B.

104. field : S *ajra* ; Gk *agros* ; L *ager* ; Gm *akrs* ; Arm *art*. Not C, B, Sl.

105. fire : a) S *agni* ; L *ignis* ; B *ugnis* ; Sl *ognŭ* ; Ht *Agnis* 'Firegod'. Not Gk, C and Gm.

106. b) Gk *pur* ; Gm *fōu/fȳr* ; Ht *paḫḫur*, Toch A/B *por/puwar*. Not S, L, C, B, Sl.

107. flower : L *flos*, °*floris* ; C *blath* ; Gm *bloma* ; Not S, Gk, B, Sl. (original PIE?)

108. heat : S *gharma*; Gk *therm*; L *form-*; Gm *warm/varm*; O Pr *gorme*; Alb *zjarm*; Arm *jerm*. Not C, B, Sl.

109. juice, sap : S *rasa* 'juice, liquid'; L *rōs* 'dew, fluid'; B and Sl *rasa, rosa* 'dew, fluid'. Not Gk, C, Gm.

110. b) S *sava* ; L *sū-cus* ; C *suthi* ; Gm *sou* (*sū-gan*) . Not Gk, B, Sl.

111. leaf : Gk *phullon* ; L *folium* ; C *bile* ; Gm *bla-t*. Not S, B, Sl.

112. moon : S *mās* ; Gm *mona* ; B *menuo* ; Sl *mĕsic* ; Toch A/B *mañ/meñe*. Not Gk (*meis/mēn-* only 'month'), L (*mensis* 'month'), C (*mī* 'month').

113. mountain : S *giri* ; Gk *deirós* 'hill, mount' (Hes); B *nu-gara* 'mountain-ridge'; Sl *gora*. Not L, C, Gm.

114. mud : S *panka* ; Gm *fani/fen* ; B *pannean* 'swampland'; Sl *panča* (C *zech*). Not Gk, L, C, Sl.

115. order : S *ṛta/ṛtu* ; Gk *artus* 'limbs (ordered in the body)'; Arm *ard* 'ordered structure'. Not L, C, Gm, B, Sl.

116. path : S *pa(n)th-* ; *Gk* patos ; Gm *pæþ* ; OPr *pintis* ; Sl *pqtŭ* ; Arm *hun* (?). Not L, C.

117. poison : S *viṣa* ; Gk *ios* ; L *vīrus* ; C *fi* ; Not Gm, B, Sl.

118. rain : a) S *varṣa* ; Gk *(h)ersē* 'dew, raindrop-s'; C *frass* 'shower' (MIr). Not L (*pluvia* cogn with S *plu-*, Gk *pleō* 'float, sail'), Gm, B, Sl.

119. b) S *abhra* ; Gk *ombros* ; L *imber* ; Arm *amb*. Not C, Gm, B, Sl.

120. sea : L *mare* ; C *muir, mor* ; Gm *morei*, etc; B *mares* ; Sl *morje*. Not S, Gk.

121. season, summer : S *samā* ; C *sam* ; Gm *sumar* ; Arm *am* 'year'; Toch A 'rainseason'. Not Gk, L, B, Sl.

122. seed : a) L *se-men* ; C *si-l, had-* ; Gm *sōed* , *sā-mo* ; B *se-kla* ; Sl *sē-me*. Not S, Gk.

123. b) S *bīja* ; B *miežys* ; Arm (and Iranian) *mšak* 'seed-sower'. Not Gk, L, C, Gm, Sl.

124. shade : S *chāyā* ; Gk *skia* ; Gm *scūo* ; Sl *sje-na, cien* ; Alb *hē* ; Toch B *skiyo*. Not L, C, B.

125. sickness : C *serg* ; Gm *sorg/sorh* 'anguish'; B *serga* 'disease'. Not S, Gk, L, Sl. (S *sarga* < √*srj* 'emanation'?)

126. sky, cloud : S *nabhas* ; Gk *nephos* 'mist'; C *nem/nef* ; B *debes-is* ; Sl *nebo* ; Ht *nepis* . Not L, Gm.

127. smoke : S *dhūma* ; L *fumus* ; C *de-* , *dumacha* ; Gm *toum* (and 'steam'); B *dūmai*, Sl *dymŭ*. Not Gk (*thumos* 'spirit, passion').

128. star : S *star-* ; Gk *astēr* ; L *stella* ; C *sterenn* ; Gm *stairnō* ; Arm *astl-* ; Toch A/B *sreň/, cirye*. Not B, Sl.

129. stone : a) S *asman* (also 'sky'); Gk *akmōn* 'anvil, sky'; C *cefn* (?); Gm *himins*; B *akmu-, āšmen-* ; Sl *kamen* (?). Not L.

130. b) Gk *stia* 'pebble'; Gm *stein* ; Sl *stijena*. Not S (but √*styā* 'be stiff'), L, C, B.

131. stream/river : S *srotas* (*sarit* , *nadī*); Gk *rheuma, rhoos* ; C (*sruaimm*), *sruth* ; Gm *strōm*; B *srava, sriove* ; Sl *struja*. Not L.

132. surface : S *tala* ; Gk *tēlia* ; (L *tellus* 'earth';) Gm *dilo*. Not L, C, B, Sl.

133. sweat : S *sveda* ; Gk *hid-rōs* ; L *sudor* ; OE *swāt* ; B *sviedri* (pl). Not C, Sl.

134. top : S *varṣman* (adj *varṣīyas* 'higher'); B *viršus* ; Sl *vrŭchŭ*. Not Gk, L, C, Gm.

135. tree : S *dru-ma*; Gk *dru-s* 'oak', *dru-mos* 'forest'; Gm *trē* (ON), *dro-m* 'thicket, forest' (OE); Sl *dre-vo* (?). Not L, C, B.

136. water : a) S *udan* ; Gk *hudōr*; etc, in all exc L (*unda* 'wave').

137. b) L *aqua* ; Gm *ahwa/ēa* 'river'; Ht *eku/aku*; Toch *yok* 'drink'. Not S, Gk, C, B, Sl.

138. c) S *ap-* (*āpas* pl); B *upe* ; OPr *ape* ; Toch AB *āp* (f). Not Gk, L, C, Gm, Sl.

139. d) S *vār-i* ; Gk *our-* (and 'urine'); (L *ūrina* 'urine', *ūrinor* 'dive';) Gm *var-/ūr* ; B *jūra* 'sea'. Not L, C, Sl.

140. wave : S *ūrmi* (√*val* 'turn'); (Gk *eilō* 'roll, turn'; L *volvo* 'turn';) Gm *wylm* ; B *vilnis* ; Sl *vlūna*. Not Gk. L, C.

141. wind : S *vāta* ; etc, in all exc Gk (*ane-mos*, cogn with L *anima* and S *ana* 'breath') and B.

142. wound : Gk *oulē* 'scar'; L *vulnus* ; C *gouli*, Gm *waol* 'pestilence'; Not S, B, Sl.

143. year : S *vatsa-ra* ; Gk *fetos* ; L *vetus* ; B *vetušas* ; Sl *vetŭchŭ* ; Alb *vit* ; Ht *u̯itt*. Not C, Gm.

V) Environment Man-made. Several stems are common to all seven branches: axle, door, edge/rim, wool, etc. But just as many have no common stem – army, battle, cloth as distinct from 'clothing', etc. Apart from some exceptions,foodstuffs, clothing, tools and various utensils are not examined since they are highly variable.

144. awl : S *ārā* ; Gm *al, āla* ; O Pr *ylo* ; B *yla*. Not Gk, L, C, Sl.

145. axe : Gk *axinē*; L *ascia* ; Gm *oex*. Not S, C, B, Sl.

146. band : S *bandh-a/ana* ; Gk *peisma* (?); C *buinne* ; Gm *bandi*. Not L, B, Sl.

147. beam : Gm *balca* ; B *balkis*; Sl *balka*. Not S, Gk, L, C . (Highly doubtful PIE.)

148. bed : Gk *lechos* ; L *lectus* ; etc, all exc S, B.

149. belt, girdle : Gk *zōstēr*, B *juosta* ; Sl *po-jasu* ; Av *yāh-*. Not S, L, C, Gm.

150. board : S *phalaka* ; Gm *fjql* ; Sl *pol* . Not Gk, L, C, B.

151. bowl, cup : S *kalaśa* ; Gk *kalux* ; L *calix* ; OE *caelic*. Not C, B, Sl. (The words 'cup', C *copan*, Gm *cuppe* etc are thought to derive from L *cuppa*.)

152. bread : (Gk *klib-anos* 'oven for baking bread';) Gm *hlaf* ; B *klaips* ; Sl *chlebŭ*. Not S, Gk, L, C. (Highly doubtful PIE.)

153. buckle, fastening : S *(ā)sañjana* ; C *sēn* 'harbour-net'; Gm *senkel* 'shoe-fastening'; B *segu*. Not Gk, L, Sl.

154. butter : S *sarpis* ; Gk *helpos* (Hes); Gm *salba* ; Alb *gjalp* ; Toch *sälyp-e* . Not L, C, B, Sl.

155. cask, covering : S *kośa* 'cask (for valuables)'; Gm huz-*d* (Gth), *hauss* (ON) 'skull', *hosa* (OE) 'husk'; B *kiauše* 'skull (=brain cask)'. Not Gk, L, C, Sl.

156. copper, ore : S *loha* 'red metal'; L *rōdus* ; Gm *a-ruzzi* ; Sl *ruda*. Not Gk, C, B.

157. cord : S *sināti/sinoti/syati* 'bind' (*sīman* 'hair-parting, boundary'); Gk *himas* , °*mant* ; C *sīm* 'chain, cordon'; Gm *sim-i/o* ; B *sai-te* 'bond'. Not L, Sl.

158. cover, shelter : S *śarman* ; Gk *kalumma*; (L *celō* 'cover' vb; C *celim* vb;) Gm *hilms* '*helmet*', vb *helan*; Not L, C, B, Sl.

159. curve, hook : S *anka* ; Gk *ogkos* 'hook'; L *uncus* ; C *ēkath* 'hook'. Not Gm, B, Sl.

160. dough : C *tāiz* , *toaz* ; Gm *thæsma* ; Sl *testo*. Not S, Gk, L, B. (Improbable PIE.)

161. edge, tip : S *aśani* ; Gk *akōn* 'lance' (*akonē* 'whetstone'); L *agna* 'ear (of corn)'; B *aśnis*. Not C, Gm, Sl.

162. fight : S *yudh-* and vb; Gk *husminē* ; (L *iubeo* 'command';) C -*iud* 'fighter'; (B *judeti* 'agitate';) Sl o-*juminŭ* 'warrior' and *judzič* 'excite'. Not L, Gm, B.

163. floor : S *tala* 'surface'; Gm *dil* ; OPr *talus* ; Sl *tilo*. Not Gk, L, C.

164. flour, meal : C *blend* ; Gm *melu* ; B *milti* ; Ht *memal*. Not S, Gk, L, Sl. (I doubt it is PIE.)

165. grain, barley : a) S *yava* ; Gk *zeiai* (pl); B *javas* ; Sl *jevin, ovin*; Ht *ena* (?). Not L, C, Gm.

166. b) S *dhāna* 'corn'; Gk *danakē* ; (B *duona* 'bread';) Toch B *tāno*. Not L, C, Gm, B, Sl.

167. honey : a) Gk *meli* ; L *mel* ; C *mil* ; Gm *milip* (Gth only); Arm *melr* . Not S, B, Sl.

168. b) S *madhu* 'honey, sweet drink'; Gk *methu* 'wine'; C *mit* , Gm *metu* 'mead'; B, Sl *medu* 'honey'. Not L.

169. house : a) S *dama* ; Gk *domos* ; L *domus* ; Sl *domŭ*. Not C, Gm, B.

170. b) C *both/bod* 'dwelling'; Gm *buð* ; B *butas*. Not S, Gk, L, Sl.

171. c) S √*viš* ; Gk *oikos* ; L *vicus* ; Gm *weihs* , *wic* ; Sl *vĭsĭ*. Not C, B.

172. incision, line : S *rekhā*; (Gk *ereikō* 'rend';) C *rhwgg*; Gm *riga* (; B *riekti* 'cut(bread)'). Not Gk, L, B, Sl.

173. metal : S *ayas* ; L *aes* ; Gm *aiz*. Not Gk, C, B, Sl.

174. mill-stone : C *breuan* ; Gm *quirn* ; B *girnos* ; Sl *žrŭny* ; Arm *erkan*. No S, Gk, L. (Despite its incidence in the 5 branches this stem may well not be PIE. The S *grāvan* has now been shown to mean 'singer' not the stone for pressing Soma: see Thomson 2001.)

175. plough : Gk *arotron* ; L *arātrum* ; C *arathar* ; B *ar-kl-* (?); Sl *radlo*. Not S (vb S *vrka* ?), Gm (Gth *arjan* 'plough, cultivate').

176. pot : S *caru*; C *coire* ; Gm *hwer(r)*. Not Gk, L, B, Sl.

177. price. roof : S √*sthag* ; Gk *steg-*; etc, all exc B, Sl.

178. value : S *vasna* ; Gk *ōnē* ; (L *veno* 'sale';) Arm *gin* ; Ht *uaš̌-*'buy'. Not L, C, Gm, B, Sl.

179. shield : L *scūtum* ; C *sciath* ; (Gm *scī-d/t* 'board';) B *skydas* ; Sl *štitŭ* (?). Not S, Gk (unless *aspis*, °*idos*), Gm.

180. sickle : S *sṛṇi* ; Gk *har-pē* ; (L *serra* 'saw';) B *sirpe*; Sl *sŭrpŭ*. Not L, C, Gm.

181. soup/broth : S *yūs* ; L *iūs* ; B *jūše* ; Sl *jucha* . Not Gk, C, Gm.

182. spear : a) S *šula* 'spike'; Gk *kelon* 'shaft'; C *cail* ; OPr k*elian*. Not L, Gm, Sl.

183. b) S *heti* 'missile'; Gk *chaios* 'staff' (*gaison* < C); C *goaf*; Gm *gār*. Not L, B, Sl.

184. spindle a) S *tarku*; Gk *a-trak-tos*; (L *torqueo* 'twist';) Sl *trakŭ* 'girdle'; Toch A *tark* 'earring'. Not L, C, Gm, B.

185. b) S *vartulā* (lex); C *fertas* etc; Gm *wirtel*; Sl *verteno*. Not Gk, L, B.

186. thread : S *snāyu* 'si' new, string'; Gk *nēma*; C *snāthe*; Sl *niti*. Not L, Gm, B.

187. wheel : a) S *cakra*; Gk *kuklos*; Gm *hwēol*; Toch AB *kukäl/kokale*. Not L, C, B, Sl.

188. b) (S *ratha* 'chariot';) L *rota*; C *roth*; Gm *rad*; B *ratas*. Not S, Gk, Sl.

189. [piece of] wood : S *dāru*; Gk *doru* 'shaft, spear (tree)'; (C daur *'acorn'*); Gm *triu* 'tree' (Gth); Ht *taru*. Not L, C.

190. work : S *ā̆pas*; Gk *aph(e)nos* 'wealth', *ompnē* 'livelihood'; L *opus*, *ops* 'aid, wealth'; Gm *uoba* 'festival', *uobe* 'farmer' (OE *aefnan* 'to work'). Not C, B, Sl.

VI) Animals. Some animals' names present a sure common stem: cow (S *gau*, L *bos*, etc), sheep (S *avis*, B *avis* etc), swine (Gk, L *sū-* etc), dog (S *śvan*, Gk *kuōn* etc), horse (S *aśva*, Gm *eoh* etc), flea (S *pluṣī*, Gm *floh* etc), ant (S *vamra*, L *formica* etc, but not **B**). Many, like donkey and camel, have thoroughly disparate stems. Most birds too belong to this category with the notable exception of goose/swan (S *haṃsa*, Gm *gans* etc) and duck (Gk *nēssa*, Sl *aty* etc; **not C**). Fishes also have diverse stems.

191. animal : a) Gk *zōon*; C *bea-thach*; B *gyvolis*; Sl *zīvotŭ*. Not S, L, Gm.

192. b) (cattle:) S *paśu*; L *pecu*; Gm *fihu*; O Pr *pecku*, B *pekus*. Not Gk, C, Sl.

193. c) (wild:) Gk *thēr(ion)*; L *ferus*; O Pr *swirin*; B *zver(i)s*; Sl *zvĕrĭ*. Not S, C, Gm.

194. bear : S *ṛkṣa* ; Gk *arktos*; L *ursus* ; C *art* ; Arm *arj-* ; Alb *ari-*. Not Gm, B, Sl.

195. beaver : L *fiber* ; C *befer* ; Gm *bibar* ; B *bebrus* ; Sl *bobr*. Not Gk and S, which has *babhru* '(red-) brown' and *babhruka* 'ichneumon', which is of this colour.

196. bird : S *vis/ves* ; (Gk *aiFetos* 'eagle', *oiōnos* 'augur'; / L *avis* ; Not Gk, C, Gm, B, Sl.

197. cow : S *ahī* (lex); (Av : *azī-* '(cow/mare) with young';) C *ag* ; Arm *ez-n* . Not Gk, L, Gm, B, Sl.

198. deer, elk : S *ṛśya* 'male antelope'; Gk *ela-phos* ; C *elain* ; Gm *elch* ; etc, all exc L.

199. feather, wing : S *patra* ; Gk *petri-* ; L –piter, (C *atar* 'bind';) Gm *fjoðr*. Not C, B, Sl.

200. feather, leaf : S *parṇa* ; Gk *pteron* 'wing', *pteris* 'fern'; OE *fearn* fern'; B *s-parnas* 'feather', *pa-par-tis* 'fern'; Sl *pero* 'feather'. Not L, C.

201. fish : L *piscis* ; C *īasc* ; Gm *fisk*. Not S, Gk, B, Sl.

202. fox : S *lopaśa* ; Gk *a-lōpēx* ; (L *vulpes* ;) C *louarn* ; B *lape*. Not L, Gm, Sl.

203. goat : S *eḍa* (some prefer *aja*); Gk *aix* (gen *aig-os*); B *ožys* ; O Pr *wosee* ; Arm *aic*. Not L, C, Gm, Sl.

204. hare : S *śaśa* ; C *ceinach* ; Gm *haso* ; O Pr *sasius*. Not Gk, L, Sl.

205. horn : S *śṛṅga* ; Gk *keras* ; L *cornu* ; Gm *haurn*. Not C, B, Sl.

206. louse : S *yūkā* ; Gm *lūs* ; C *lleun* ; B *ute* , *liule* ; Sl *vŭšŭ*. (So several scolars.) Not Gk, L.

207. meat : S k*ravis* ; Gk *kreas* . (L *cruor* 'blood from wound'; C *crō* 'blood'); OE *hrēaw* 'bloody, raw (meat)'; B *kruvinas* 'bloody'. Not L, C, Sl

208. mouse : S *mūṣ* ; Gk *mūs* , L *mūs* ; etc, all exc C, B.

209. nest : S *nīḍa* ; L *nīdus ; C net ; Gm nest ; B lizdas* ; Sl *gnĕzdo* , Arm *nist*. Not Gk.

210. ox/bull : S *ukṣan* (*ukṣáti* : 'moisten'); C *ych/o'chen* ; Gm *auhsa/ohso* . Not Gk, L, B, Sl.

211. pig : L *porcus* ; C *orc* ; Gm *fearh* ; B *paršas* ; Sl *prase*. Not S, Gk.

212. serpent : S *sarpa;* Gk *herpeton* , L *serpens* ; C *sarff.* Not Gm, B, Sl. (In C and Gm only the cognates *nathir* (Ir) and *naðr* (ON)/ *nadra* (OE).)

213. snake : S *ahi* ; Gk *echi-/ophi-* ; L *anquis* ; B *angis* ; Sl *už/waž.* Not Gm, C.

214. worm : S *kṛmi* ; C *cruim* ; B *kirmis* ; Sl *črŭvĭ.* Not Gk, L, Gm.

VII) Qualities (adjectives) Many ajectives have sure cognate stems: alive (S *jīva,* L *vīvus* etc); big (S *mah-,* L *mag-* etc, but **not B, Sl**); narrow (S *aṃhu,* B *ank- štas,* etc); light (of weight: S *laghu* , Gm *leihts* etc); right (of direction: S *dakṣ,* L *dex-,* C *dess* etc); new (S *nava* , Gk *neo-* etc); old (S *sana,* L *sen*etc but **not Sl**); grey/hoary with stem *pal-* (**not Gm**, where *fal* 'fallow'). But some common terms like those denoting 'far' and 'near' have no clear common stems. Colours and the generic term itself are on the whole very unclear: white (not 'bright-white' S *arjuna,* Ht *harkii* etc), yellow (often as 'green'), brown, black, blue etc; exception is 'red' (S *rudhira,* Gk *eruthro-* etc). Stems for directions east, west etc are very diverse.

215. all/every/whole : a) S *viśva* ; O Pr *wissa* ; B *visas* ; Sl *vesič* , *vĭsĭ.* Not Gk, L, C, Gm.

216. b) S *sarva* ; Gk *holos* ; L *salvus ;* C *(h)uile.* Not Gm, B, Sl.

217. bitter, sour : S *amla* ; L *amarus* ; Gm *ampfaro* ; B *amuols* ; Alb *ëmblë* ; Arm *amok.* Not Gk, C, Sl.

218. bright : S *bhrāj-a* ; C *berth* ; Gm *bairhts, beraht* ; Ht *parkwis* 'pure'. Not Gk, L, B, Sl.

219. daring : S *dhṛṣṇu;* Gk *thras / thars-us* ; Gm *gu-dars;* B *drasus* ; Sl *drŭzŭ.* Not L, C.

220. dark : S *tamasa;* C *temen* ; Gm *din-star;* B *tamsas* ; Sl *taman.* Not Gk, L.

221. deaf : S *badhira;* C *bodar* etc; Gm *baubs* ; Arm *bot* 'blunt'. Not Gk, L, B, Sl.

222. dear, intimate: a) S *priya;* C *rhydd* (=*priya*) 'free'; Gm *frī* 'free', *frijōn* 'dear'; Sl *prija-je.* Not Gk, L, B.

223. b) S *śeva* ; (L *c(e)ivis* 'citizen';) Gm *heiwa-(frauja)* 'host, master'; B *sieva* 'wife'. Not Gk, L, C, Sl.

224. deep : C *dwf-n* ; Gm *dēop* ; B *dubus* 'hollow'. Not S, Gk, L, Sl. (PIE very doubtful.)

225. dense : S √*ta(ñ)c-*; C *tēht* ; Gm *pettr* (ON); B *tankus*. Not Gk, L, Sl.

226. difficult, -ill-, mal : S *duṣ* ; Gk *dus-* ; C *do/du-*; Gm *tuz/zur-*; Sl *dŭž-*. Not L, B.

227. dirty, black : S *malina*; Gk *melas*; L *malus* 'bad' etc; (Gm *māl* 'blemish';) B *melns* 'black, dirty' and *melsvas* 'bluish'. Not C, Gm, Sl.

228. dry : S *śuṣka* ; Gk *havos* ; Gm *sear* (OE); B *sausas* ; Sl *suchŭ*. Not L, C.

229. empty : S *tucchya* ; (L *tesqua* 'desert'); B *tuščias* ; Sl *tŭštŭ*. Not Gk, L, C, Gm.

230. fast : S *āśu-*; Gk *ōku-*; L *ocior* 'faster' (compar.); C *di-auc*. Not Gm, B, Sl.

231. firm : S *dhruva*; Gk *droon* 'strong' (Hes); Gm *triuwi* 'true, staunch'; B *drutas*; Sl *sŭ-dravŭ*. Not L, C.

232. first, former : S *pūrva*; Gm *forw* – (OE dial); Sl *prŭvŭ*; Alb *pare*; Toch AB *pärwat/pärve*. Not Gk, L, C, B.

233. foreign, next, other : S *araṇa, ari*; Gk *allos*; L *ollus* 'that (other) one', *alius* 'stranger'; C *alllos* ; Sl *lani*. Not Gm, B.

234. good : a) S *vasu* ; C *–vesus* (in names); Gm *wisu-*. Not Gk, L, B, Sl.

235. b) prefix S *su-*; Gk *hu/eu-*; C *su/so/hy-*; B *su-*; Sl *sŭ-*. Not L, Gm.

236. green(-ish) : S *hari(-ta)* ; Gk *chlōro-*; B *želvas*, Sl *zelenŭ*. Not L, C, Gm.

237. heavy : S *guru* ; Gk *baru-*; etc in all exc C, Sl.

238. lesser : S *hrasva* 'short, weak, unimportant'; Gk *cheriōn* ; C *gair, garait* 'short of life'. Not L, Gm, B, Sl.

239. long : S *dīrgha* ; Gk *dolichos* ; B *ilgas* (loss of *d*); Sl *dlŭgŭ* ; Ht *dalugaes*. Not L, C, Gm (unless loss of *d* in stem *lang-*?).

240. low : a) Gk *ch(th)amalos* ; L *humilis* ; B *zem(a)s* : all from stem for 'earth'. Not S, C, Gm, Sl.

241. b) S *nitara-*; Gm *niperlic* ; Sl *nizŭkŭ*. Not Gk, L, C, B.

242. many, much : S *puru-* ; Gk *polu -*; L *plus* 'more'; C *il, ile* (pl); Gm *filu*. Not B, Sl.

243. much, thick : S *bahu(la)* ; Gk *pachu-*; (cf ON *bingr* 'heap';) B *biezs* thick; Ht *pankus* 'whole'. Not L, C, Gm, Sl.

244. paternal : S *pitrya* ; Gk *patrio-* ; L *patrius* ; C *aithre*. Not Gm, B, Sl.

245. perpetual : S *nitya* ; Gm *nipris*, *niðir* ; C *nitio-*. Not Gk, L, B, Sl.

246. quiet : S *sama* 'calm, even'; C *sāim* (*sām* 'rest' n); Gm *sōm* (OE) 'agreement'. Not Gk, L, C, Sl.

247. raw : S āma ; Gk ōmo-; C *om* ; Arm *hum*. Not L, Gm, B, Sl.

248. slow : (Gk *lēd-* 'be lethargic' *SGD* but now deleted in *GEL* ; L *lassus* 'tired';) Gm *lat(r)*; B *letas*. Not S, Gk, L, C, Sl. (PIE doubtful.)

249. smooth : a) Gm *gla-t/d* ; B *glud(u)s* ; Sl *gladŭkŭ*. Not S, Gk, L, C.

250. b) Gk *leios* ; L *lēvis* ; C *llyf-n* ; Gm *s-lettr*. Not S, B, Sl.

251. sparse, thin : a) S *vi-rala* ; L *rārus* ; B *ret(a)s* ; Sl *rĕdŭkŭ*. Not Gk, C, Gm.

252. b) S *manāk* ; Gk *mano-* ; C *men-b* ; B *menkas ; Toch A mank* 'lack(ing)'. Not L, Gm, Sl.

253. sweet : S *svādu* ; Gk *hēdus* (*Fadus*); L *suavis* ; Gm *swēte*. Not C, B, Sl.

254. thin : S *tanu* ; Gk *tanu-thrix* 'thin-hair'; L *tanuis*; Gm *dunni*. Not C, B, Sl.

255. true : a) L *vērus* ; C *fir* ; Gm *wār*. Not S, Gk, B, Sl.

256. b) S *satya* ; Gk *eteos* ; Gm *soð*. All originally 'existing'. Not L, C, B, Sl.

257. wicked : S *piśuna* ; Gk *pikros* 'caustic'; Gm *fah* hostile; B *piktas* 'angry'. Not L, C, Sl.

258. wide : S *pṛthu* ; Gk *platus* ; C *lethan* (?); B *plat(u)s* ; Ht *palhis*. Not L, Gm, Sl.

259. young : S *yuvan* ; L *iuvenis* ; C *ōac* etc; Gm *juggs* etc; B *jaunas* ; Sl *junŭ* ; Arm *yavanak*. Not Gk.

VIII) Actions, processes and states (verbs). Many verbs (activities and states of being) have common stems: be (S *asti*, Gk *esti*, etc); live (S √*jīv* , Gk *bioō/zō*, L *vivere* etc); stand (S √*sthā*, Gk *histē-*, L *stō* etc); sit (S *sad/sīd-* , Gk *hez*, Gm *sit* etc but **not C**); spread/strew (S √*str* ; L *ster* , B *stir* etc); turn (S √*vrt*, L *vert* but **not Gk**); bear/carry (S √*bhr*; Gk *pher-* but **not B**); lick (S √*lih*, Gk *leich-* etc); eat (S √*ad* Gk *ed-*, Gm *eta* etc); drink (S √*pā*, Gk pi, L *bi* etc); urinate (S √*mih*, Gk *omich-*, Sl *miž-* etc); break wind (S *pard-*, Gk *perd-* etc). But many more show great diversity: bow, create, dig, fight, gather, halt, hang, etc, etc.

260. anoint : a) S √*añj* > *añjana*; L *unguere, unguen*; (C *imb* & OHG *ancho* 'butter'). Not Gk, C, Gm, B, Sl.

261. b) S √*lip* > *lipti* ; Gk *aleiphō* , *lipos* 'fat'; B *lepti* . Not L, C, Gm, Sl.

262. awaken : a) S *jāgar-*; Gk *egeir-*; Arm *ngrë-he* . Not L, C, Gm, B, Sl.

263. b) S *budh-/bodh-*; (cf Gk *peuth-, punth-* 'learn'; Gm *biudan* 'bid'); B *budeti* ; Sl *buditi* ; cf Toch AB *pot/paut-* 'revere'. Not Gk, L, C, Gm.

264. be excited/angry : S *kupyati* ; (L *cupio* 'desire vehemently';) Sl *kypěti* 'be agitated, seethe' ; Ht *kap-pila* 'be angry'. Not Gk, L, C, Gm, B.

265. be faint, stunned : S *tam-/tāmya-*; (L *temu-lentus* 'befuddled, drunk'; C *tām* 'death';) Gm *dam-lich* stupefied', *dūm-eln* 'deaden'; Sl *tom-iti* 'drudge, oppress'. Not Gk, L, C, B.

266. be silent : S *tuṣṇīm bhū-*; C *toaim* ; B *tusnan* ; Sl *Tosna* 'Silent' name of river. Not Gk, L, Gm.

267. become : S *bhū>bhavati* ; Gk *phuō, phuomai* 'grow, appear'; all others have cogns of *asti/esti* etc 'to be' but not of *bhū/phu-* except various forms which have become integral parts of 'to be' (e.g. L *fui* 'have been' perf; C *buith* or B *būti* 'to be'; etc): so not L, C, Gm, B, Sl.

268. beget : S *jan-*; Gk *gen- gignomai* ; L *genere* ; C – *genathar/geni* . Not Gm, B, Sl.

269. blow : S *vā*; Gk *aē-mi* ; Gm *waian/wajan* ; Sl *vějati*. Not L, C, B.

270. blow, blast : S √*dham* ; (Gk *theme-ros* 'serious'; C *dem* 'black'; Gm *daam* 'odour';) B *dumti* ; Sl *doti*. Not Gk, L, C, Gm.

271. boil : a) S √*yas* ; Gk *zeō* ; Gm *giest, jastr* . Not L, C, B, Sl.

272. b) S *bhur-van* 'agitated, restless'; L *fervere* ; C *birbaim* ; Gm *brinwan* ; Sl *bruja* 'streaming'. Not Gk, B.

273. break/shatter : a) S √*ruj* ; (Gk *leuga-* 'ill-luck-'; L *lūgeo* 'mourn'; C *luch-t* 'piece';) Gm *tō-lūcan* ; B *laužti*. No Gk, L, C, Sl.

274. b) S √*rup* , √*lu(m)p* ; L *rumpo* ; Gm *reofan* ; B *rup-* 'be anxious'; *lamp-* 'break, rob'; Sl *lup-* 'flog, peel off'. Not Gk, C.

275. c) S *bhañj* , *bhanakti* ; C *bongid* ; B *bengti* 'discontinue, end'; Arm *bekanem* . Not Gk, L, Gm, Sl.

276. breathe : S *an* ; C *anāl-* ; Gm *–anan* ; Toch *añ-m*. Not Gk (but *an-emos* 'wind'), L (but *an-ima* 'air, breath'), B, Sl (but *von-ja* 'smell').

277. burn : a) S √*dah* ; B *deg-u* ; Sl *žega* ; Alb *djek* ; Toch A/B *tsak*. Not Gk, L, C, Gm.

278. b) S *du-noti* ; Gk *daiō* ; C *doim* ; Gm *tȳna* , *zuscen* 'injure, pain, torment'; Alb *dhunë)* 'pain'. Not L, B, Sl.

279. burst : S √δṛ; Gk *derō* 'flay'; Gm *ga-taurnan*; B *dirti*; Toch *tsar-* 'separate'. Not L, C, Sl.

280. buy : S *krīnati* ; Gk *priasthai* ; C *cīth* 'purchase' n; (B *kricus* 'money';) Sl *krŭnuti*; Toch B *krayor* as C. Not L, Gm, B.

281. care for, rescue : S *nas-ate* 'approach, join with'; Gk *neomai* 'mind/restore (home)'; Gm *ge- nasjans* 'rescue'; *genisan* 'recover'; Alb *knellen* (=*k-nes-l-) 'restore oneself'. Not L, C, B, Sl.

282. cook : S *pacati* ; etc (with Alb and Toch AB); all exc Gm.

283. cough : S √*kās* ; C *cas-/pas-*; Gm *hōsta* etc; B *koseti* ; Sl *kasiljati.* Not Gk, L.

284. crackle, thunder : S √*sphūrj* ; Gk *spharag-*; Gm *spraka* (ON), but (OE) *sprecan* 'speak'; B *sprageti.* Not L, C, Sl.

285. crush/grind : S *pinaṣṭi* ; Gk *ptissō* ; L *pinsere* ; B *paisyti* ; Sl *pŭchati.* Not C, Gm.

286. cry(out), weep : S √*rud-*; L *rudere* ; Gm *riozan* ; B *raud-* ; Sl *rydatŭ.* Not Gk, C.

287. cure : S √*iṣ* 'invigorate'; Gk *iainō*; (Gm *eisa* 'dash forward'). Not L, C, Gm, B, Sl.

288. cut : S *kṛntati* ; Gm *scrindan* 'burst, split'; Sl *črěsti*; Ht *kartai.* Not Gk, L, C, B.

289. cut free : S √*lu* 'cut free/off'; Gk *luō* 'loosen'; L *luā* expiate, pay off'; Gm *lun-, liusan* . Not C, B, Sl

290. despise : S √*nind*; (Gk *oneidos* 'disgrace';) Gm *ga-naitjan* 'slander'; B *niedeti* 'detest'; Arm *a-nicanem* 'curse'. Not Gk, L, C, Sl.

291. die/perish : a) S *mṛ-/ mar-/ mri-* ; (Gk only *e-mor-ten* 'died' Hes; *marai-nō* 'wither'; *a-m-b-rotos* 'immortal';) L *morior* ; B *mirti*; Sl *mrěti.* Not Gk, C, Gm

292. b) S *naś-* ; L *necāre* ; Toch A/B *nak/nek-.* Not Gk, C, Gm, B, Sl.

293. direct, govern : S √*r(ñ)j* ; L *regere* ; C *rigim* . Not Gk, Gm, B, Sl.

294. dress : S *vas(-te)* ; Gk *hennumi/hes-sai* ; L *vestire*; Gm *wasjan* ; Ht *u̯eš-* ; Toch B *was-tsi.* Not C, B, Sl.

295. dwell, stay : S *vas(-ati)* ; Gk *aesa* (aor); C *fō(a)id* ; Gm *wisan/sesan* ; Arm *gom* 'exist'; Ht *ḫu̯iš-* . Not L, B, Sl. (I ignore the stem *man/men-* since it is common to S, Gk, L and some others.)

296. enjoy : S √*bhuj* ; L *fungor* and 'be busy with'; Alb *bungë.* Not Gk, C, Gm, B, Sl.

297. extend/stretch : S √*tan* ; Gk *tan-, tein-* ; L *ten-dō*; etc; all exc C, Sl.

298. faith, trust: S *śraddhā* (also vb 'showing faith, entrusting'); (Gk *krad-* , *kard-ia* 'heart, seat of faith';) L *credo* 'believe' (*cret-do 'give trust'); C *cretim* 'believe, trust'. Not Gk, Gm, B, Sl.

299. fill : S √*pṛ* > *piparti* ; Gk *pimplēmi* ; L *plere* (in cpds *im/com*-); C *linaim* (; Gm *fulls*, B *pilnas* , Sl *plŭnŭ* – all 'full' adj). Not Gm, B, Sl.

300. find : S √*vi(n)d* ; Gk *inda-llomai* 'turn up'; C *ro-finnadan* 'find out'; Arm *egit* aor 'found'. Not L, Gm, B, Sl. (I suspect Gm *finna* /ON), *findan* (OE) etc, are related despite the IEL rules that forbid the S *v*/Gm*f* correspondence.)

301. flow : S *sru-/srava-* ; Gk *rheō* ; C *sruaimm* ; B *sraveti* 'ooze out'. Not L, Gm, Sl.

302. (The C and Gm branches have the cognate stems for 'running': C *rethim* ; Gm *rinnan/renna* which are linked with S √*r* > *ṛṇoti* , Gk *ornumi*, etc, 'stir'. The Gm stems *flowan* etc 'flow' are linked with S *plu-*, Gk *pleō* 'float'.)

303. fly : S *pat-* ; Gk *pet-*; C *hed-/eth-* ; Ht *pet-*. Not L (*petere* 'seek'), Gm, B.

304. follow : S *sac-ate* ; Gk *hepomai* ; L *sequor* ; C *sechitir*, B *sekt-*. Not Gm, Sl.

305. forget : S *mṛś-* ; B *miršt-* ; Arm *moromam* ; Toch A/B *märs-*. Not Gk, L, C, Gm (perhaps *marzjan* 'vex'?).

306. free/release : S *muc-/muñca-* ; Gk *apo-mussō* 'blow/free nose'; L *ē-mungere* 'blow/free nose'; B *maukti* 'strip off/wipe' and *smukti* 'slide off'. Not C, Gm, Sl (but *smyk-ati* 'crawl').

307. go : a) S √*i* ; Gk *eisi* ; L *it* ; etc, all exc Gm.

308. b) S √*yā* ; (L *iānus* 'god of passages'; C *āth* 'crossing';) B *joti* ; Sl *jachati* ; Ht *iịa=* ; Not Gk, L, C, Gm.

309. go ahead/after : Gk *hege-omai* ; (L *sāgīre* 'perceive, discern';) C *saigim* 'seek'; Gm *sokjan, sēcan*. Not S, L, B, Sl.

310. grab, take : S *grabh-*; Gm *gr(e)ipan, garva* ; B *grābt*; Sl *grabiti* ; Ht *karp-* 'take away'. Not Gk, L, C.

311. groan, roar, thunder : S √*stan* (and 'thunder'); Gk *stenō* ; L *tonare* 'thunder'; Gm *stenan* ; etc, all exc C.

312. grow : a) S √*ukṣ* ; Gk *auxō* ; L *augere* ; Gm *wahsjan* ; B *augt* ; Toch A *okṣis*. Not C, Sl.

313. b) S √*ruh* (>*rodhati*); (Gk *e-leuthe-ro* ; L *liber* 'free'; C *luss* 'plant';) Gm *liudan* ; Sl *ljudŭje* . Not Gk, L, C, B.

314. grow, increase : S *vṛdh*; (Gk *ortho-* 'up-right';) B *radit* 'beget'; Sl *roditi* 'help grow'; Alb *rit* 'grow'. Not Gk, L, C, Gm.

315. grow old : S √*jṛ* > *jar-*; Gk *gēr-ō/askō* ; (Gm *karl* 'old man';) Sl *zŭreti* 'ripen') ; Arm *cer* 'old man'. Not L, C, Gm, B.

316. have sex : S √*yabh* ; Gk *oiphō* ; Sl *jebati*. Not L, C, Gm, B.

317. harm, injure : Gk *skeda-nnumi* 'grind, scatter', *a-skēthēs* 'un-hurt'; C *scathaim* 'injure, mutilate'; Gm *skaða*, *scadōn* (; B & Sl borrow Gm). Not S, L, B, Sl. (PIE doubtful.)

318. hear : S *śru-/śṛ-* ; Gk *kluō* ; L *clueo* ; C *clui-/clyw-* ; Gm *hlyða*, *hlystan* 'listen'; (B *slu-dinat*, Sl *slu-ti*, Toch AB *klāw-* last three 'inform, make known'). Not B, Sl.

319. heat : S *tapati* ; L *tepeo* ; C *tē* 'heat'; Sl *top-lŭ* 'hot'. Not Gk, Gm, B.

320. increase, thrive : S √*sphāy* ; (L *pro-sperus* 'favourable';) Gm *spuon* ; B *speti* ; Sl *spěti* . Not Gk, L, C.

321. join, yoke : Σ √*yuj* > *yunakti* ; Gk *zeug-nu-mi* ; L *iungo* ; B *jungiu* . Not C, Gm, Sl. (n : S *yuga* ; Gk *zugon* ; L *iugum* ; Gm *juk* ; Sl *igo*. Not C, B.)

322. jump, mount : S *skand* ; (Gk *skandalon* 'trap';) L *scando* ; C *se-scaind*. No Gk, Gm, B, Sl.

323. know : S *vid-/ved-* ; Gk *oida* (perf); C *fet-ar* ; Gm *witan* ; Sl *věděti*. Not L (but *vidēre* 'see'), B. (The stems S *jñā-* , Gk *gnō-*, etc, is common to all.)

324. lead : C *fedim* ; B *vedu* ; Sl *veda* , *vod-* . Not S, Gk, L, Gm.

325. lessen : S *mināti* ; Gk *minu-thō* ; L *minu-ere*. Not C, Gm, B, Sl.

326. lie down : Gk *lecho-mai* ; C *leigim* ; Gm *ligan* ; Sl *ležati* ; Ht *laki*. Not S, L, B.

327. lift : Σ √*tul* ; Gk *tlēnai* ; L *tollo* ; Gm *þulan*. Not C, B, Sl.

328. march, walk : S √*stigh* ; Gk *steichō* ; C *tiagn* ; etc, all exc L.

329. milk : Gk *amelgo* ; L *mulgere* ; etc; all exc S, where *mṛj-* 'rub/stroke' (cf Gk *o-morg-numi* 'rub/wipe off'!).

330. overpower : S √*ji* > *jay-/jinā-* ; Gk *biao* (*bineō*?); Gm *kveita* (ON). Not L, C, B, Sl.

331. plait/twine : Gk *plek-ō* ; L *flectere* ; Gm *flechtan* ; Sl *plesti*. Not C, B and S (which has *praśna* 'turban').

332. praise : S *gṛ-ṇāti* (and 'call, invoke'); C *bar-dus* (Gaul) 'bard, praiser'; (Gm *queran* 'sigh, moan';) B *giriu* ; Sl *granŭ* 'verse, form[-ula] (of praise?)'; Alb *gri-sh* 'call, summon'. Not Gk, L, Gm.

333. pull : Gk *helkō* ; B *vilkt* ; Sl *vlěšti* ; Arm *helk*. Not S, L, C, Gm.

334. push : S √*tud* ; (L *tundo* 'strike, pound';) Gm *stautan* ; Alb *štum* . Not Gk, L, C, B, Sl.

335. put : S √*dhā-* ; Gk *ti-thē-mi* ; C *dodi/dede* ; B *dēti* ; Sl *děti* ; Ht *dāi* ; Toch A/B *täs/tēs*. Not L (but *condere* 'found'), Gm (but *tuon* 'do').

336. question : S *prach/pṛch-* ; L *posc-/prec-*; etc; all exc Gk.

337. rage : S √*ruṣ* ; Gk *alu(cc)ō* 'be beside oneself'; Gm *rūsen* ; B *rusti*. Not L, C, Sl.

338. reach : S *āp-noti* ; L *ap-īscor* , *ad-ip-īscor* ; Arm *unim* 'possess'; Ht *ep-mi* 'take'; (Toch A *oppäśśi* 'fit,able'.) Not Gk, C, Gm, B, Sl..

339. remember : S *smṛ/smar-* ; (Gk *mer-/imna/mēra* 'care for';) L *memor*, Gm *geminor* . Not Gk, C, B, Sl.

340. rest : S √*ram* ; (Gk *ē-rem-a* 'calmly') -C *fo/fui-r(i)mim*; (Gm *rimis* n;) B *rimti* ; Not Gk, L, Gm, Sl.

341. rip, tear : S √*dṛ* ; Gk *derō* 'flay, tear away'; Gm *teran*; B *dir-* ; Sl *dirati* . Not L, C.

342. ride : C *riadaim* ; Gm *riða(n)* ; B *raid* . Not S, Gk, L, Sl. (I doubt this is PIE.)

343. rise : S *ut-thā* ; Gk *an-istha-*; Gm *us-stand-*; Sl *vŭ-stan-*. Not L, C, B.

344. roast : S *bhṛjj-* ; Gk *phrugō* ; L *frigo*. Not C, Gm, B, Sl.

345. satisfy : S √*tṛp* ; Gk *terp-ō* ; B *tarpti* 'thrive'. Not L, C, Gm, Sl.

346. say/speak/talk : a) S √*vac-*; Gk *eipon* 'spoke/said'; (L *vox* 'voice', *voc-are* 'call'; C *foccul* 'word';) Gm *gi-wah-annen* ; O Pr *en-wack-ēmai*. Not L, C, Sl.

347. b) S √*vad-*; Gk *aud-aō* ; B *vadinti* ; Sl *vaditi* ; (cf Ht *uttar* 'word, speech';) Toch AB *wátok* 'bid, tell'. Not L, C, Gm.

348. c) S √*bhā-ṣ* (also *bha-ṇ/n*) ; Gk *phā-/phē-mī'*; L *fārī* ; Gm *boian*; Sl *ba-jati*. Not C, B.

349. see : a) S *dṛś,/darś-* ; Gk *derk/drak-* ; Umb *terk-antur* 'should foresee'; C *e-drych* 'look', *adcin-darc* 'have seen' perf *adcin-*); Gm *ga-tarhjan*. Not B, Sl.

350. b) S *lok/loc-* ; Gk *leusso* ; C *llyggad* ; B *laukti*. Not L, Gm, Sl. (There are other stems for 'seeing'; *vid* – in L *vidēre* is primarily for 'knowing' and even L has no other cognates. Then S *[s]paś-* ; Gk *spek-t-* for *skep-t-* 'visualize, think'; L *spec-* 'see'; Gm *spehōn*.)

351. sew : S √*siv* ; L *suo* ; Gm *siujan* ; B *siuti* ; Sl *siti*. Not Gk, C.

352. shine : S √*śvit*; B *šviesti* ; Sl *světěti*. Not Gk, L, C, Gm.

353. show : S *diś-ati* ; Gk *deik-numi* ; L *in-dico* ; Gm *zeigōn* ; Ht *tekku-*. Not C, B, Sl.

354. slay/strike : S √*han* ; Gk *thein-o* ; etc; all exc Gm.

355. sleep : a) S √*svap-* ; C *sūan-*; Gm *swefan* ; Sl *sŭpati*: Ht *šup-*. Not Gk (but *hupnos* m 'sleep'), L (but *sopor* 'sleep', *sopire* 'put to sleep'), B (but *sapnas* 'a dream').

356. b) S *drā-*; Gk *e-dra-thon* 'slept'; L *dor-mīre* ; Sl *drěmati* ; (Arm *tartam* 'drowsy';). Not C, Gm, B.

357. slide : Gk *olisthanō* ; C *llithro* ; Gm *slidan* , B *slysti*. Not S, L, Sl.

358. smile : S *smi-/smay-* ; Gk *mei-deaō* ; B *smiet* ; Sl *smijati* ; Toch *smi*. Not L, C, Gm (but ME and Norweg. *smi-l-* 'smile').

359. sneeze : S √*kṣu* ; Gm *hnjosa* ; B *ciande* ; Sl si/*ky-chat*. Not Gk, L, C.

360. soar : S *dī-yati* ; Gk *dī-neō* ; (C *dian* 'fast';) B *diet* 'dance'. Not L, C, Gm, Sl.

361. strike : S √*tuj* ; C *tuagaim* ; Gm *stozan* . Not Gk, L, B, Sl.

362. suck: a) S *dhayati* ; Gk *thē-sato* (aor); Gm *dadjan* ; B *deju* ; Sl *dojo* ; Arm *diem* . Not L, C.

363. b) L *sugo* ; C *sūgam* ; etc, all exc S, Gk.

364. swim : Gk *nē/nā/-chō* ; L *nāre* ; *C* snā(i)m. Not Gm, B, Sl and S, which does have *snā-ti* 'bathe, wash'.

365. taste : S √*juṣ* 'enjoy'; Gk *gev-omai* ; L *gust-*; Gm *kausjan*. Not C, B, Sl.

366. think, reflect : S √*man*; C *do-moin-iur* ; Gm *munan* ; B *manyti* ; Sl *mĭněti*. Not Gk (only 'remember' *mnāo-* and 'be enraptured, enraged' *maino-*), L (only 'remember' *me-min-esse*).

367. tie up : a) S *nah-yati* ; L *nec-tere* (*nodus* 'knot, bond') ; C *nascim* . Not Gk, Gm, B, Sl.

368. b) S *sā/sī-*; B *siety* ; Ht *hiṣhi-* . Not Gk, L, C, Gm, Sl.

369. vomit : S *vam-iti* ; Gk *emeō* ; L *vomere* ; B *venti* . Not C, Gm (but ON *vama* 'sickness'), Sl.

370. wash : S √*nij* > *nenek-ti* ; Gk *niz-ō* ; C *nig-id* ; Gm *nih-* . Not L, B, Sl.

371. weaken : S *vra(n)d-* (only in *RV*); Gk *rhada-naomai* 'be weak, unsteady'; Sl *vrĕdu* etc 'harm'. Not L, C, Gm, B.

372. weave : S √*u(m)bh, ve* ; Gk *huph -ainō* ; C *figim* ; Gm *wefan, weban* , B *aust* ; Alb *ven* . Not L, Sl.

IX) Indeclinables. Here are 20 adverbs and prepositions. Some few stems are common to all branches, like that for 'round, about' (S *pari*, Gk *peri(x)* , etc) or the base for 'how, when, who?' (S *ka-*, B *ka-* etc). Some claim that L *com/con/cum-* , (and C *com-* etc) 'together with' is linked with Gk *kata* 'downward, against, according to, during, almost': it is obvious there is neither phonetic nor semantic proximity but

IEL invented PIE *kṃt and *kom as sources. Just as unacceptable is the proposed link between Gk *dia* 'right through, by means of' and L *dis* and Gm *twis/z(w)is* 'in, between, two', where again there is neither phonetic nor semantic affinity. I ignore all such cases.

373. above, over : S *upari* ; Gk *huper* ; L *super* ; etc, all exc B, Sl.

374. against, toward : S *prati;* Gk *proti* , *pros* ; B *pret* ; Sl *protivŭ*. Not L, C, Gm.

375. also, upon : S *api;* Gk *epi;* (L *ob* 'against';) C *oi-* intensifier in *cpds;* Gm *if-* as with C; B *api;* Arm *ev* 'and'. Not L, Sl.

376. and, further : S *ati* ; Gk *eti* ; L *et* ; C *eti* 'also'; Gm *iþ* 'but'; OPr *et* . Not Sl.

377. before, near, opposite : S *anti;* Gk *anti;* L *ante;* Arm *and* ; Ht *hanti* . Not C, Gm, B, Sl.

378. down, off : S *ava;* Gk *av;* etc, all (including Ht *u/wa*) exc Gm.

379. farther, beyond : S *para* - ; Gk *pera(n)* ; Osc *perum* ; Arm *heri* ; Ht *parā*. Not C, Gm, B, Sl.

380. forth, before : S *pra-* ; Gk *pro* ; etc, all exc Gm *fra-* = intensifier as in MdG *ver-* . Not Gm.

381. here : S *iha* ; Gk *itha-;* L *ibī* ; C *id* . Not Gm, B, Sl.

382. in, between : S *antaḥ* ; Gk *entos* ; L *inter* ; C *eter* ; Gm *unter*. Not B, Sl.

383. near to, from low : S *upa* ; Gk *hupo* ; L *sub;* C *fo* ; Gm *uf* 'onto'. Not B, Sl.

384. off, away : S *apa* ; Gk *apo-* ; L *ab-;* Gm *af-;* Ht *apa* 'again, behind'. Not C, B, Sl.

385. thus : S *iti* ; L *ita ;* C *yt* ; B *it*. Not Gk, Gm, Sl.

386. to, toward : S *abhi* ; Gk *amphi-;* etc, all exc B.

387. together, with : S *sa-, sam;* Gk *ha-, sun;* B *sam, san;* Sl *sǫ/su-* . Not L, C, Gm.

388. tomorrow : S *uṣar, uṣra ;* Gk *avrion;*(Gm *eastre* 'goddess of spring', OE;) B *ausra*. Not L, C, Gm, Sl.

389. up(ward): S *ut̤-*; Gk *hu-*; L *us-*; (Gm *ūt* 'outside';) B *už*; Sl *vŭz*. Not C, Gm.

390. where, how : S *ku-* (*tra*, etc); Gk *o-pui* (Cretan) etc; Osc *puf*; B *kur*; Alb *ku*. Not C, Gm, Sl.

391. without : a) S *r̥te* ; (Gk *erēmo* 'solitary' adj;); L *rāro* 'rarely'; (B *irti* 'to separate';) Toch AB *arts* 'any'(?). Not Gk, C, Gm, B, Sl.

392. b) S *niḥ-*; Gk *a-nis* ; Sl *nis-tŭ*. Not L, C, Gm, B.

393. yesterday : S *hyas* ; Gk *ser-* , *(e)chthes* ; L *her-i/e* ; C *in-de* ; Gm *ges-* , *i-gar*; Alb *dje*. Not B, Sl.

12. The Results. The list contains numbered stems examined in detail. But there are a few more in the introductory paragraph to each section which show absences in one or other branch. So the total with significant differences is 404. Obviously, stems common to all seven branches have not been counted; so also stems that have no clear common cognate (§ 8-10) or do not yield a clear central meaning.

Of these 404, S lacks 53; Gk 149; L 207; C 210; Gm 145; B 185; Sl 215. Thus, in a descending sequence: S -53; Gm - 145; Gk -149; B -185; L-207; C -210; Sl - 215.

Obviously, Gm and Gk are very close but quite far from S. The difference is enormous. B is on its own but nowhere near Gk and Gm. These two large gaps between S and Gm/Gk and Gm/Gk and B would not be bridged even if 50 or 100 more words were to be examined. There is only a good possibility that Gk might overtake Gm by a short head (and L might creep close to B or even ahead of it).

Here clearly Mallory's notion that early large literatures (Vedic, Greek, Latin) preserve more is not borne out by these results (§ 4). Other factors are more important, the main one being a secure oral tradition which can be established only in conditions of settlement not movement. To forestall many empty or idle arguments I take the Hittites as a prime example. The language of the Hittites has very few IE

retentions and their culture scant IE elements. Yet this people produced many texts very early c1600. Why the discrepancy then?... To this question Mallory replied "Obviously Anatolian [=Hittite varieties] documents are so riddled with Sumerian... [etc] ... that it is reasonably obvious that it is not comparable" I wouldn't disagree in the least. But there is no point in repeating this very condition as an answer to the question which asks for an explanation of the problematic condition. Why is Hittite so riddled with extraneous, non-IE elements?... Obviously this is an anomaly: it is not at all accommodated by the prediction. Why is Hittite in such a sorry state regarding IE retentions?... (An answer is given in § 15.)

13. Objections. It may be objected that someone else with a different choice of items would produce different results, with S after Gk. I do admit that it is possible that I omitted some items: the list is not complete by any means. Even if I had rigged the choice of items in favour of S and 50-60 stems were replaced, the gap between S and Gm/Gk would remain quite large. From the general feel I obtained about the languages through constant consultation of the publications mentioned in § 7, end, I can state with certitude that a significantly different choice could not be made without a gross violation of the simple principles set out in §§ 6-10. After all, I could have included Av(estan) and taken Av with a third branch (Gk, L, C, Gm, B or Sl): e.g. S *apara*, Av *aparō*, Gm *afar* 'farther, later, next' ; S *navya* , Av *nāvaya*, Gk *naio* – 'navigable, of boat'; S *śyāma* , Av *sāma*, Lith *šemas* 'darkcoloured'; etc, etc. This would enlarge the gap in favour of S enormously. I could also have taken only S and another branch; even without the pairing of S and Av, S would gain an incalculable advantage. Consider: – S *anu* 'fine, minute', Gk *alinos* 'barely visible'; also S *dramati/drāti*, Gk *dramein* 'run' or S *dhavati/dhāvate*, Gk *theō* 'run, flow' (cogns in Gm mean 'stop, trample'). There are many

more: S √arh , Gk alphein 'be worth, deserve'; S jaran, Gk gerōn 'old' ; S daṃsa 'wondrous power , act', Gk dēn-ea (pl) 'strategems'; etc, etc. See also: S maha-yati, L mac-tare 'glorify'; S akṣa, L alea 'die (dice)'; S vaṣṭi, L vē(n/s)sīca 'bladder'; etc. Or take S śak-ti and C cēcht 'force, power'; etc. Then, S aru 'wound', Gm orr 'scar'; S druh-yati 'harms' and drogha "false, harmful', Gm triogan, 'deceive' and draugr 'ghost'; S pīyati 'revile', Gm fien, fijan 'blame'; etc, etc. Moreover: S aśru, Lith ašara 'tear', S vāra, Lith vāla 'horsehair'; etc. Also, S pitu, Sl piš-ta 'nourishment'; S √kliś 'torment', Sl kleštitŭ 'jam, press'; etc. And S dūra, Ht tūu̯a 'far'; etc. And of course one could take S and Av only: atharvan/aθravā 'priest', iśe/ise, 'is master', godhūma/gantumo 'wheat', dasyu/dahyu- 'demon' etc, etc. Had I done this, the gap between S and the second, whether Gk or Gm, would increase astronomically. And, in any case, I have included stems found only in 3 European branches that we know inter-borrowed – like L, C and Gm or Gm, B, Sl: such stems I suspect are not PIE.

Nothing could be more certain and invariable in all conditions than the parts of the human body. Of the 40 stems examined, S lacks 4, Gm 12, Gk 13, L 19, B 20, C 23 and Sl 29. Thus, apart from the positions of L and B which are very close with L slightly ahead, the percentages seem to be very similar to the overall picture with the 404 stems. There is a large gap between S and Gm/Gk and between Gm/Gk and L/B. (Yes, 2 or 3 cognations – no more – might be disputed but this would not alter much the general situation.)

14. Another objection may be (and has been stated by Mallory) that S, Gk and L have very large literatures from early on; to those should be added Hittite. This is true, of course. It is true also that social or religious changes (subjugation or the advent of Christianity) affected seriously the language and culture of many European communities – as Zarathustra's religious reform affected ancient Iran. These may account for

some of the decays and losses in some branches but they are not alone responsible for all the observable disparities in preservation.[4] The Greeks stayed under the not very enlightened rule of the Ottomans for 4 centuries but they did not lose their religion in the slightest and, although several words were borrowed from Turkish, changes in the language had began long before the Ottomans. Mallory wrote that S, Gk and L would, because of their early and large literatures, show more retentions than the other branches.[5] He should have included Ht also which appears much earlier than Gk, L and S; but because **Ht disproves most flagrantly this notion**, it is never mentioned, or it is mentioned only to be covered over with irrelevancies. However, Mallory's prediction is most obviously wrong, as is shown by the figures in §12 where Gm, despite its late literacy, is slightly ahead of Gk and leaves L far behind, both so rich linguistically. So let us look at this rationally.

All IE branches had an oral tradition before the adoption of writing. The Indus-Sarasvati culture had writing c3000 but we don't know for certain whether it was Sanskritic or some other language. In India, writing in recognisable IE (or Middle Indoaryan) appears in 260-250 (or perhaps a little earlier), particularly in Ashoka's Rock-Edicts. We also have ample evidence that the sacred texts (*RV* etc) were being transmitted orally in the 7th cent CE and even in the early 20th cent: generation after generation of brahmin families specialised in this task (Winternitz I, 29-32, 51-2). Caesar reported a similar practice among the Celts who "learnt by heart many verses" studying under a teacher "for twenty years" and, although they made use of Greek letters, in most other matters, the Druids did not "think it fit to put these utterances into writing" (*De Bello Gallico* VI, 14). The Greeks too had an oral tradition and some esoteric cults maintained it well into Roman times

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[4] For details and references see Kazanas 2003: 209-210; also especially 2005.

[5] This in the private communication to me, Nov 2004: see §4, above.

(Kingsley 1995: 332ff; Murray 1993:100). Indeed all IE branches maintained an oral tradition, otherwise we would not know about their early period, before the advent of literacy.

Hittite texts written on tablets survive from c1600 BC. Mycenaean texts come from c1500 BC, also on tablets; Greek epigraphic material appears from c700 BC on stone and pottery and various (fragmented) texts on golden plates and even papyrus from c400 BC – while manuscripts become plentiful the first cent CE. Roman written material is just as plentiful from the same period and epigraphic material (Oscan, Umbrian have only such) goes back to c 500 BC (O Latin). Literacy in the other branches, Gothic , then other Germanic , Slavonic and finally Baltic came some centuries later (though some Gm runes appear from c 100 BC). In India writing is attested seriously only c 260-250 BC in Aśoka's Rock-Edicts which are in *prākṛta*. No doubt writing was used perhaps extensively in the state administration , literary compositions and commerce. But the sacred Vedas (from which more that 90 % of the Indic material has been drawn) were transmitted orally even in the 7th cent CE. Although there was writing (on palm leaves and birch bark), very few manuscripts survive from before the 14th cent CE. So in this respect, even if the Vedic sacred texts had been committed to writing (Sāyana wrote his commentary on the *RV* in the 14th cent CE), the Indians are no better off than any other branch (except the Balts) and are certainly worse off than the Hittittes, the Mycenaeans and Greeks and the Romans with their early literacy.

15. Yet, despite its early and vast literature, Gk lost the IE stems for flesh (15), mouth (26), nose (31) and tongue (39), desire/love (45), man (70b and 72d), twin (81) and widow (83), to mention few stems that are retained by non-literate Gm and in some cases even 'poor relatives' like B, C and Sl! How does a language lose its own words for mouth, nose and tongue? Surely no religious or social change can account for this. Only a weak oral tradition and a long trip away from the homeland would be responsible

here. Then the Greeks changed the meaning of their own IE stem for mind (51) to 'force', for brother (56) to 'member of a brotherhood', for sister (77) to 'daughter', etc. Again, these stems are preserved in branches that acquired literacy much later (eg C, Gm, B and Sl – except 'mind' in the last two). Then, despite its early and large literature (consider too the expanse of the Roman Empire from Persia to Britain), L lost the IE stems for arm (1,2), eyebrow (12), flesh (15), fear (48), vehemence (55), sage (75), son (78), woman (85), etc – stems retained in many cases by C, Gm, B and/or Sl.

As for Hittite, it lacks both stems for arm (1, 2) and for ear (9, 10),head (19, 20), knee (23), mouth (26), nose (31) etc. **It also lacks the stems for the eight closest human relations: brother (56), daughter (62), father (64), husband (66), mother (73), sister (77), son (78) and wife (84) – almost all common to most branches.** Please note certain facts. The Hittites are mentioned in near-Eastern documents by c1900. So they were in Anatolia somewhat earlier and established a kingdom which by c1600 expanded to form an Empire; this threatened peoples as distant and mighty as the Egyptians and lasted down to the 12th century (Dunstan 1998). They were dominant conquerors. Thus they had not been coerced into abandoning their IE heritage and adopting new cultural features. They did this because they found the new culture(s) just as good, if not better than, the one they had brought. They had travelled far from their homeland and obviously were not numerous enough to impose their own culture on the indigenous people some of whom were already literate and highly cultured. I would add that **they were an *elite dominance* group and had brought no families or not many (wives and children) with them**; so they lost the terms for these intra-family relationships and adopted the corresponding words of the local languages. They preserved very few IE theonyms (Agnis, ^{D}Siu= Zeus/Dyaus, and perhaps Inara = Indra/Andarta) and adopted deities prevalent in the area. No other explanation will fit the data that we have.

Now all the words examined in this section denote well-known bodily parts that every human has everywhere (arm, flesh etc), common feelings (fear, love) and concrete figures (man, sister, son, woman). It is not likely that Gk, L and Ht had them but somehow failed to record them; for they have other, non-IE substitutes. The stems were lost before literacy. Now, undoubtedly, the presence of literacy and a large literature will support the continuity of language and culture, but the examples just quoted are not really affected by such factors. The non-literate languages preserved most of these stems and Gm preserved about as much as Gk and certainly more than L and incomparably more than Ht with its very early literacy. Therefore, apart from late literacy and small literature, there must be additional and stronger causes for lexical break-downs, decays and losses. We touched on this in § 4 and will return to it later. Now we need to look at an aspect other than the Preservation Principle.

16. Just as important, is the principle of **O(rganic) C(oherence)** of a language, something which IEL usually overlooks. It is doubtful whether any language can exist without it. Take as example the non-inflected English language. When we see scattered through a text the words *acted, activity, action, active, actionless* and *actively*, or *enacted* and *reactivates*, we know that there is a root stem to which all of them are related: *act*, both noun and verb. Moreover we know that all these forms have been generated by the addition of various endings and prefixes to the root *act*. Thus, we also have *created, creativity, recreates*, pro-*creation, creative, creationless, creatively*, from the root stem *creat-e*, which is only verb. Being non-inflected and largely consisting of loans from other languages (both *act* and *create* come from Latin), English has no elasticity and great generative ability: thus it has *inaction* and *procreation* but not *increation* and *proaction*. Nonetheless, it has some generative power which gives it O C, however limited. Thus, in a limited frame, *fear-less-ly, hope-less-ly* and *mind-less-ly* are

organically coherent with root-stems *fear-*, *hope-*, and *mind-* (which will generate further *fear-fully*, *hope-ful-ly*, *mind-ful-ly* and some other forms). The important point is that in the language we find clusters (or families) of words, nouns, adjectives, verbs and adverbs, which are all related together, having been generated from a root-stem. A word becomes thus an integral part of a lexical family and of the language.

17. However, a language has also isolated words, not related to a root-stem. In English, we have several such words: *aegis, again, can, canabis, den, denim, javelin, lady*, etc. They too are integral parts of the language, but some are loans from other languages, others are changed forms of older words that belonged to a family and had other - now lost - connections. E.g. *aegis* comes from a Gk word that denoted the terror-striking shield of Zeus. Then, take *lady*: it is a decayed form of an OE word *hlǣfdīge* : this is a cpd *hlāf+dīg* and means 'one kneading (=*dīg-*) the loaf-of-bread': that is what a 'lady' did in old times. In Sanskrit too we find many words that stand isolated, evidently unrelated to *dhātus* or even other isolated words: *ambā* (mother), *ulkā* (sky-fire), *khara* (rough), *jūṭa* (hair), *pika* (cuckoo) etc, etc.

To illustrate this further, let us take the common stem for 'light'. S has a root √*ruc* 'shine' and derivatives *ruci, rocis* 'light'; also *ruk-ma* 'what shines, golden ornament' and *ruk-min* 'wearing gold ornament', f *ruc* 'brightness', *ruca* 'bright', *roka* 'lustre', *roca* 'radiant' etc. This root has also a full conjugation – pres *rocate*, perf *ruroca* , causative *rocayati* ; etc. This is Organic Coherence. In contrast, Gk *leuko* and L *lux* has no apparent root; any cognates in their respective language are secondary derivatives produced from themselves. Here, Gk and L has no OC. Let us explore this further.

18. The POC operates revealingly in the old languages. L *serpēns* 'serpent' (212) is a present participle of vb *serpō* 'I crawl'. L *repō* 'creep' also may belong to this family (an

older *srepo?), but it merely duplicates the verb *serpo* which has no other derivatives. Gk has a slightly larger family with vb *herpō* (I creep), *herpeton* (serpent: 212), *herpēs* 'shingles' and secondary v b *herpuzō* (I crawl), which could generate more forms. S has a much larger family with (√*srp*>) *srpra* 'oily, smooth', *sarpa* 'serpent' (212), *sarpana* 'the act of crawling', *sarpin* 'creeping/gliding', *sarpis* 'clarified butter (what glides)', etc. The L cogns tell us that (some) verbal forms end in -*o* and (some) present participles in -*ens*. The Gk cogns have a regular m ending in -*ēs*, adjectival noun in -*to*- and secondary vb in -*uzō* (or -*izō*): thus *nau-t-ēs* 'sailor' cogn with *naus* 'boat'; *lu-to*- 'loosened' < *luō* ; *plo-izō* 'navigate' < *ple-ō* 'sail'. The S family shows more endings for primary derivatives and the regular change of the root-vowel, **r** → guṇa **ar** : thus √*srp* → *sarp* and common endings -*a* m (√*chid* 'split' > guṇa *ched-a*; √*trp* 'enjoy' > guṇa *tarp-a*), the n -*ana*, the adjectival -*in* , the n -*is* (*hav-is* 'oblation' √*hū*) and the less common -*ra* , added directly to roots (*chid-ra*, *trp-ra*). Note that except *sarpin* (in *Br*) all other S words are in the *RV*.

19. With 'bearing' (VIII, Introductory) we find that the pattern repeats. L has a very small family: vb *ferō* 'I bear/carry', adjs *ferāx* and *fertilis* 'fertile, fruitful' and *fūr* 'thief (one who carries off)'. Gk has a slightly bigger family: *pherō* 'I bear', *pharetra* 'quiver', *phernē* 'dowry', *pher-ma* 'what is borne', *phertron* 'what bears, bier', *phora* f 'the action of bearing', *phor-os* 'tribute', secondary vb *phoreō* 'usually bear, wear' and *phōr* 'thief'. S has a very large family: (√*bhr* >) -*bhr-t* 'one bearing', *bhrti* 'action of bearing', *bhr-tya* 'to be borne/supported, a retainer/servant', *bhr-tha* 'offering, borne and given'; *bhar-a* 'bearing, gain', *bhar-ana* 'act thereof', *bhar-tr* one who supports, a husband, master', *bhar-man* 'support, care'; *bhār-a* 'burden, load', *bhār-in* adj 'carrying', *bhār-man* 'support, table', *bhār-ya* to be supported' and *bhār-yā* 'wife'; also *bhrā-tr* 'brother (one who supports secondarily).' In S, except for *bhar-in* (post-V) and *bhāryā* (in *Br*) all the others are in the *RV*.

We learn a little more from the Latin group but it is difficult to see how the stem *fer-* becomes *fūr* 'thief' (*e* > *ū*). Just as difficult is the Gk *phar(-etra)* and *phōr* 'thief' from '*pher-*'; otherwise the endings and the other vowel changes are regular for Gk: n *-ma* (*der-ma* 'skin', *pneu-ma* 'breath, breeze'); n *-tron* (*aro-tron* 'plough'); f *-a* after *r-* is usually f *-ē* (*bor-a* 'prey' but *men-* > *mon-ē* 'a stay'); m *-os* (*leg-* > *log-os* 'proportion, word'). These terminations are recognizable relatives of S ones: Gk n *-ma, -tron* , f *-ā/-ē* and m *-os* correspond to S *-man, -tram* (in *bhar-i-tram*), f *-ā/-ī* (*bhāryā, bhariṇī*) and m *-as* (*bhar-as*). In S we see again the endings *-ana* denoting 'act of' and *-in* adjectival, etc.

S has also *-tṛ* (*bhar-tṛ*) which with the guṇa gradation gives an agent-noun. The n *-tra* commonly gives the instrument of the activity (state or condition) denoted by the dhātu: thus √*as* 'throwing' > *as-tra* 'instrument of throwing, a missile'; √*ṛ* 'moving' > *ar-i-tra* 'instrument promoting movement, an oar'; √*nī* 'leading' > *netra* 'instrument leading, the eye'; etc. The agent nouns are even more numerous: *as-tṛ* (*tar,* voc) 'thrower'; *ar-i-tṛ* (*-tar*) 'mover, rower'; *ne-tṛ* (*-tar*) 'leader'; *e-tṛ* 'goer', *kar-tṛ* 'maker', *je-tṛ* 'conqueror', etc, etc. To this S ending corresponds Gk *-tēr, -tōr* and L *-er, -or.* thus S *dā-tṛ* (*-tar,* voc) 'giver' (<√*dā*) has Gk correspondences *do-tēr* and *dō-tōr* and L *dater,* all 'giver'; cf also S *pi-tṛ* (*-tar*), Gk *pa-tēr* and L *pa-ter,* all 'father'.

Apart from *bhar-tṛ* 'master, supporter', S has also *bhrātṛ* 'brother'. This (i.e. *-ṛ* > *-ra*) is not a very common formation and IEL does not (fully) accept that this noun comes from √*bhṛ*; again, Whitney has it in the derivatives under √*bhṛ* but with a question-mark (p 114). NIGT accepts it, however, and since IEL can offer no exp-lanation and, in any case, most of these S relation nouns (*pi-tṛ* 'father', *svasṛ* 'sister' etc) entail something anomalous in their formation. I think it is mere pedantic quibbling not to accept √*bhṛ* > *bhrātṛ*. Cf √*kṛ* > *kra-tu* 'power, will', *gṛbh*, *gṛh/grabh-/grah-* 'taking, grabbing',

√dr̥s > draṣ-t' 'seer' etc. (Perhaps the implication is that the brother is the secondary supporter of his sister(s), the primary one being the father or the husband).

20. As a further example, we take 'dressing' (293). Here L has only the vb *vestio* 'I dress' and *vestis* 'attire'. Gk has the vb *ennumi* and several words for garment *eima/emma, es-thēs* (< *es-thiō* 'I dress') and *gestra* (Hes). The S family of √*vas* is again larger: *vasa, vasana, vasti*(lex), *vastr̥, vastra, vāsas, vāsin,* etc. Here, apart from *vasti* (lex), *vastr̥* (post-V) and *vāsin* (in *Br*) all others are in the *RV.* We recognise all the endings we have already met: *-a, -ana, -tr̥,* etc. We also see *-as* (=n; cf *oj-as* 'strength') and *-ti* (m/f; cf *bhr̥-ti,* above, also *kr̥-ti* 'a creation', etc). Note that Gth (=Gm) has only the vb *wasjan* and the noun *wasjos* "cloth(es)'. Hittite and Tocharian are very poor – and we shall see many such cases further along. But here we have another interesting aspect to consider. It is unanimously agreed that the PIE root here (*wes* ?) is akin to S √*vas,* Gk stem *es* (*es-nu-*) and Ht u̯aš́. How then does it become L *vest-* and Gth *wasj-* ? How does it become Gk *es-**nu**-mi* (> *en-nu-mi*)? I think there is only one explanation. L and Gth have not retained the pristine root-form but made a new verb-form from a PIE oblique form, derivative of the root, as in S ***vast-i, vast-r̥, vast-ra*** and ***vas-y-a***. The Gk vb with *-nu-* is also derivative.[6] This we shall meet in other cases too. One clear, simple example is L *cas-tr-āre* 'clip, castrate', which is cogn with Gk *keaz-ō* 'split, cleave' and S *śas-* 'cut, slaughter', neither of which has *-tr-*; but S has *śastra* (< *śas+tra,* i.e. instrument) 'knife, sword' and the L verb most probably comes from some such a stem.

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[6] The Gk thematic *-nu-* may be inherited but no other branch has any trace of this and although S certainly has *-nu/no-* for class V dhātus, *-n-* for VII and *-nā/nī-* for IX, the √*vas* does not belong to these classes. Gk does the same with *deik-nu-mi* 'I show' while, again, neither S nor any other branch has any trace of *-nu* in the cogn verb (√*dis* > *didesṭi/diśati* , L *-dicare* 'indicate, show' etc). These forms in Gk are not therefore original but subsequent Gk developments by analogy or contamination.

21. So far we see two interesting aspects. One, even basic verbal forms in some branches are not the pristine PIE stem, as clearly reflected in other branches, S being the most conspicuous. Two, while S displays fully OC having a large range of lexical items, in verbs, nouns, adjectives and adverbs, other branches show a lack of these and often tend to have either the verb with very few nominal forms or the reverse, or mere traces of the stem. This too shows that S is closer to PIE. Let us see more cases.

22. We now turn to 'mind' (51). S has *manas*, a neuter like *ojas* 'strength', *tamas* 'darkness, inertia' etc, from √*man* 'think, reflect' (366). S has also the causative vb *mānayati* and desiderative *mīmāṃsate* 'wish-to-think-on' and nouns *manana* 'act of thinking', *manu* 'man' (70) and Manu, the sage, *mantu,* 'counsel', *mantṛ* 'thinker', *mantra* 'verse, word-for-reflecting', *manman* 'concept', *manyu* 'ardour, mood', *māna* 'idea, opinion', *mānin* 'having opinions', etc. Consider now the poverty in the other branches, not excusable cases like B and C but Gk and L with their early and rich literatures. Consider also that except *mantṛ* and *mānin* (in *Br*) all the S words are in the *RV*.

B has the vb *manyti* (366) but no cognates for 'mind' or other mental aspects. Sl too has only the verb. C has the vb in *do-moin-iur* and n *menme* 'mind, spirit' but little else.

L has *mens* with stem *ment-* (cf S *man-tu,* etc); also *commen-tor* 'contriver' (cf S *man-tṛ/tar*). But the L cognate vb is *me-min-isse* 'remember' (cf S *mī-mān-sate)* showing semantic change while 'thinking' is expressed by *cogitare, putare, arbitrare.* Thus in this case, the descent from PIE has resulted in a considerable breakdown and losses.

Gk is in no better position. Its word for mind is *nous* (unconnected with any IE stems unless perhaps S √*nu* 'praise'), while its IE cogn *menos* means 'force, might'(also *mania* 'frenzy', *mantis* 'prophet, seer' and some other secondary formations). It has several cognate vbs none of which means exactly 'think': *main-o-* 'be enraged/

enraptured', *memona* (perf with pres sense) 'desire', *mi-mnē-skō* 'remind' and *mna-o-* 'remember' (cf S √*mnā* 'hand down [by memory]'), etc.

Gm is, despite its later literacy, in a happier condition. ON has *munr* for 'mind'; OE has *myne* 'desire, mind'; Gth has *muns* 'purpose' and *man* 'opinion'. Both OE and Gth have vb *munan* 'think', Here we witness slight divergencies but both noun and verb.

23. How are these phenomena to be explained? ...

We could suppose that S innovates and by analogy generates all its numerous forms in contrast to the very frugal C and Gm. But cognates of some of the S nouns are found also in other branches, Gk, L, etc: cf S *manas*/Gk *menos,* S *mant-u/* Gk *mant-is/* L *ment-,* S *māna/* Gth *man* 'opinion', etc. Thus we cannot resort to this supposition about innovations. Rather we must take it that S plainly retains many descendants from PIE while the other branches suffered losses – as was evident with 'creeping, dressing, bearing' above. The full explanation for this will be given later, after we have examined more cognations.

24. A different case is that of 'son' (78) – yet confirming our finds. It appears in S, Gm, B and Sl roughly as *sūnu-* (*su-* in Gm, *sy-* in Sl). The S word is obviously the √*sū* and the ending *–nu > sūnú* – like *gṛdh-nú* 'greedy', *bhā-nú* 'shining, sun', etc. No other cognate appears in the European branches. C has *suth* 'birth, fruit' (cf S *sūtu-*) but no cognate for 'son'!

S √*sū* gives vb *sūte* 'engenders' and is obviously linked with √*su>suvati* 'energises, vivifies' as well as *su-no-ti* 'presses out'. No such cogn verbs appear in the other branches to link with and explain the stems for son. C has *sō(a)id* and B *sukti,* both 'turn, twist'; these are linked rather with *sunoti* or *suvati* and really indicate nothing except the fact that there is a breakdown. Gk has (like the Toch AB *soy-*) the decayed form *hui-* but, again, no other cognate. Considering how common and important the son has been in

any society, irrespective of religion and other conditions, we must wonder that some IE branches do not have the cogn stem at all (e.g. L, C and Ht) and, in any case, none has any other cognates. In contrast, S has a very large family, as usual: apart from the verb and its compounds (*pra-sū-* etc), it has *sū, sūti, sūtikā, sūtu, sūtrī, sūnu-* all from the *RV* and *AV*. Consequently, we must conclude, here also S displays the PP and OCP, while the other branches suffered big and varied losses.

With this should be connected S *sū-kara* 'hog, swine'. Like 'son' this word also stands isolated in the IE languages: Av *hu-*, Gk and L *sus*, Gm *su(-gu)*, etc. Some scholars claim that *sūkara* is onomatopoeic, meaning 'the animal that makes the sound *su*'. This may be true but to me it sounds like one of the numerous explanations that scholars give in like situations in order not to face the obvious or to cover up the fact that they don't know. Swines do not hiss (*s-s-s* or *su-su-su*) but grunt. So, in this case, the obvious is that S *sū* is cognate with the stems in the other branches. They all come from some original √*sū* (and only S has −*kara* 'making, producing'). So the swine is the 'begetter' *su-*, since it gives birth to more litter than any other domesticated animal, like cattle, goat or sheep. Thus S again provides a solution to the linguistic problem of the apparently isolated stems for 'son' and 'sow'.

25. With the cognates of 'mother' (73) we meet difficulties at the very start thanks to IEL. The cogn stem is common to all, except that in B *mote* is 'wife': thus Gk *mētēr*, L *māter*, C *māthir*, Gm *mōðir/mōdor* (ON,OE), Sl *mati*. The NIGT recognizes that S *mā-tṛ/-tar* is a regular formation: √*mā* (> *mimāti/mimīte/māti*) 'measuring' and the common -*tṛ* giving the agent 'measurer'. Other similar formations *attṛ* (<√*ad* 'eat'), *etṛ* (< √*ī* 'go'), *kartṛ* (< √*kṛ* 'do'), *goptṛ* (<√*gup* 'guard'), *dhātṛ* (< √*dhā*, 'put') etc, take, like *mātṛ* the udātta accent on the ending (though some very few others take it on the stem − *ástṛ* 'thrower', *gámtṛ* 'goer'). The IEL doubts this

formation *mā+tṛ́* for no obvious sensible reason – but with much sophistry. To his credit Whitney did include *mātṛ́* (>*mātā́*) under √*mā* (p 119 with question-mark). I find nothing peculiar in the concept of mother being the 'measurer', i.e. the one who holds and gives measures to the household. As far as I have seen and can still see that is exactly what a mother does with her home, children and husband – most of the time. I suppose the reason our modern scholars reject the Indic tradition is because the equivalent to the S verbal forms are not found in any of the IE branches except L *mētior* 'measure, survey' (and Toch AB *me/mai* 'measure') and, in any case, there is no obvious cognation between the nouns for 'mother' and the verbs for 'measuring'. E.g. how is L *mētior* related to S √*mā* ? Where has the -**t**- come from (**not present in Toch AB**)? And how does it relate to L *māter* ? How does the equivalent Gk *metreō* relate to S √*mā* or to Gk *mētēr*? The difficulty in Gk is greater because apart from the -**t**- we have a short -**e**- in the stem of the verb. The same holds for Gm where 'mother' is *mōðir/mōdōr/muotar* (preserving the long stem-vowel) and 'measuring' is *māla/metan/mezzan* (with different vowels and consonants).

I submit that L *mētior,* Gk *metreō* and Gm *metan/mezzan* are secondary degenerate forms that derive not from the PIE root itself (as S √*mā* does) but from a PIE derivative noun or verbal form like S *māt-ṛ* (or *māt-rā* or verbal *māti* (or -*mīte*) etc. IEL posits here two PIE roots: **mē* (> S √*mā*) and *met (Gk *met-reō*). This again enables scholars to ignore the obvious facts, indulge in their complicated conjectures and secure their "reconstructions". But, of course, this hypothesis leaves unexplained the short and long radical vowels in the L, Gk, Gm verbs and the intrusion of -**t**- in Gk, of -**l**- in ON and of -**zz**- in OHG. In fact, here too S presents a more reasonable picture while the stems in the other branches seem to come from derivatives containing -**t**- and show break-downs and losses.

26. What of S *pitṛ* (64) and the cognates in the other branches? The short **-i-** contrasts strongly with the **-ă-** in the others; even Av has the stem *patar-* (and *pitar*). The stem *pi-* in S can only be connected with that of *pi-bati* 'drinks': this does not mean much. The evidence of the other stems, Gk and L *pa*, Gm *fa-* etc, suggest an original stem **pa* for S too[7]. Indeed, NIGT accepts this in saying that father is the 'protector' and that the noun has changed from **pā-tṛ* the root being √*pā* 'protect'. In the absence of any other evidence, I accept this. For unknown reason, S **pā-tṛ* 'father' decayed into *pitṛ*. Perhaps *pitṛ* prevailed in one dialect and subsequently became dominant. Strangely, *pātṛ* as 'drinker' and 'protector' survives in Vedic texts. Note also that apart from Av *pitar* , the -i- vowel is found in L *jū-piter* (and *Mars-piter*). cognate with Gk *Zeus*-pater. S *Dyaus-pitar*. We don't know. (IEL gives of course *ph2ter* with laryngeal.) But while the stem in the other branches is not linked with anything else, in S we find a plausible connection. There is nothing strange in regarding the father as guardian and protector with all that this entails. The mother gives measure and the father protection. In this case, S suffered decay in the form of the noun but it has a verb conjugation for √*pā* and nouns connected with it in full OC.

27. The cognates of 'daughter' (62) are not connected with any other stem in any branch. Only S has √*duh* 'extract milk'. The formation here is also very clear: *duh+i+tṝ*. The intrusive **-i-** is not unusual: see *aś-i-tṝ* < √*aś* 'eat', *tar-i-tṛ* < √*tṛ* 'pass across', *math-i-tṛ* < √*ma(n)th* 'agitate' etc. The S vb √*duh* > *dogdhi* has no equivalents in the other branches. Attempts have been made to link S *duh/dugh-* with Gk *teuchō* 'make,

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[7] IEL says that the PIE stem for 'father' had the sound ∂ ; this developed into *i* in S and *a* in the other branches. This could be true, of course, but in languages of historical times ∂ turns out to be a degeneration of *a* and perhaps other vowels; so while this IEL supposition seems quite clever, it is groundless.

build' and *tughanō* 'meet, happen', C *dual,* Gm *daug* and B *daug,* all meaning 'be suitable'. Even if these cognations are right, it is obvious that, e.g., Gk *thugatēr* 'daughter' cannot be cognate with Gk *teuch-ō* or *tugha-n-ō* – neither semantically nor phonetically. (Incidentally if *tughanō* is cogn with S *duh* > *dogdhi* where has the Gk **-n-** come from?) It is easier to link phonetically Gth *daug* 'to suit' and *dauh-ter* but not so with OHG *toug* and *tohter* or B *daug* and *dukte.* Semantically, of course, the connection is even more difficult, since it is not easy to see how the daughter 'is suitable' when in very ancient societies the son was far more desirable and suitable. Then, again, C has the vb *dual* 'it suits' but no cognation for 'daughter' (=*ingen/merch,* which are unconnected) and Sl has *dŭšti* 'daughter' but no other cognate. Osc has *futir* 'daughter' but L has no cognates at all.

The idea of the daughter being 'the-girl-who-milks' may sound strange to us but it is not strange for those far-off times; even we had 'milkmaids' not so long ago. Further, if Gk *tughan-ō* be accepted as cogn with S √*duh*, then it could only come from a secondary PIE form like the V *dohána* 'act of extracting': so, 'that which befalls' in Gk would be that which is extracted from the run of life and is suitable (?).

28. Scholars are not clear about S *pur* 'stronghold' (65) and √*pṛ* 'fill' (299). S *pur* is universally accepted as cognate with Gk *polis* and B *pil(i)s* 'fort, town' (65). This may well be so and the later use of *pur* > *pura* >*purī* certainly justifies the cognation. However in the *RV pur* denotes simply 'defence' or 'defensive field of force' with magical and occult connotations (Kazanas 2002 and 2009) and only later came to mean 'fort, town' (*pura, purī*). Mayrhofer rightly rejects the connection of *pur* with *piparti* (and causative *pūraya-*) 'fill' but he is not justified not to link *pur* with *piparti* 'protects, saves'. The *Dhātupāṭha* gives √*pṛ pūraṇa-pālana-yoḥ* 'in the sense of filling and protecting'. In S we find numerons relatives of √*pṛ* and *pur*: *paraṇa, partṛ, pāra pārin, pūraṇa*

etc. When we look for cognates of *polis* and *pil(i)s* in Gk and B (or other branches) we find none. Scholars give some verbs as cognates of *piparti* in the sense of 'filling' and similar: thus Gk *pim-plē-mi*, L *plēre*, C *linaim* – all 'fill' (299); C, Gm, B and Sl have stems for 'full' (*ful-, pil-, plŭ-*); also *perrō* 'pass through', L *portare* 'convey, lead', Gth *faran* 'travel, pull' (all the latter questionable for me). But clearly there is no cognation for 'defend, protect'. It is difficult to connect the concept of Gk *polis* 'fort, town' with 'filling' in *–plē-*. True, a town is full of people but the very ancient *polis* was not so thickly populated. In any case, a forest (full of trees and vegetation) or a lake (fall of water) would qualify better for the term *polis*, if we cling to this meaning. But in S the idea of 'defence, safety' in √*pr* and *pur* has no difficulty.

Incidentally, it is worth noting that although Gm, B and Sl do not have the IE vb stem for 'fill' (329), they have the corresponding adj Gm *fulls*, B *pilnas*, Sl *plŭnŭ*, all 'full'. Here we have loss of the vb. But B has vb *pil-dit* and Sl *plŭniti / punity*. The first may be an extension with dental like Gk *plēthō* 'be full, many' and the second severely decayed forms. Or both could be of non-IE provenance.

29. Very instructive is the case of 'foot' (16). S has the stems *pad/pād-* (weak/strong) 'foot' and also √*pad* > vb *padyate* 'falls, befalls'. Since the foot is the bodily part that constantly (rises and) "falls" we have semantic as well as phonetic agreement. Gk has *pous* (gen *pod-os)* and L *pes* (gen *ped-is)*, Arm, Ht and Toch similar cognates, but none has a cogn vb similar to S *pad-*. Only Gm shows *ge-fetan* 'fall' (OE) and has cogns for 'foot' (*fōt, fuoz)*. Corresponding to S *pada* 'step, site', Arm has *het* 'foottrace', and Gk has *pedon* 'ground' but Gm does not have this. Then Sl has *pada/pasti* 'falls' but no cogns for foot. Lith has the vb *peduoti* but its noun *padas* is 'sandal, shoe' (not 'foot'). Ht and Toch A/B have the noun but not the verb. S has also adj *padya* 'of foot', so Gk in *pezo-* 'on foot' and Lith *lengua-pedis* 'light-footed'.

Thus Arm, Ht, Toch, Gk and L have the cogn noun but not the vb while B and Sl have the vb but not the noun. C has neither noun nor verb. Only Gm shows some OC while S, as usual, has a large cluster of derivatives: *pat-ti, pat-tṛ, padana, -padi, pādin, pāduka 'shoe', etc.*

30. The stem for earth is another interesting case – with some problematic variants: S *kṣam-,* Gk *chthōn* (dialectal *gdan-, dam-, ?sem-*), L *humus,* C *dū* (OIr: 'place' rather than 'earth'), B *žēme,* Sl *zemlja,* Alb *dhe*; perhaps with metathesis, Ht *tegan* and Toch AB *tkam/kem*; not Gm. S has the adj *kṣamya* and Gk *chthonio-.* S has *kṣamā* too for 'earth' which means also 'endurance, patience'. That the earth abides , endures and is patient is a very old idea, of course, found in the earliest traditions. In Hesiod's *Theogony* Mother Earth endures all the ill treatment of Ouranos (II 159-160). In the *Old Testament* one of the Psalms says that 'the earth abideth' (119:90) and Ecclesiastes affirms that 'the earth stands for ever' (I,4). However, IEL decided that *kṣamā* 'earth' is one word of uncertain origin (other than *kṣam-* 'earth') and *kṣamā* patience (attested in the epic) is a different one, derived from √*kṣam* 'being patient, enduring'. Again, √*kṣam* > *kṣamate* etc 'endure', found in the *RV,* is not found in any of the other branches. The obvious conclusion is, as Whitney and the MSD recognize, that √*kṣam* generates all the others -*kṣam/kṣamā* 'earth', *kṣama* 'enduring', *kṣamā* 'patience', *kṣamtṛ* 'one who endures', *kṣāman* 'soil', etc and the vb conjugation(s).

31. The curious development of cognates like L *humus* 'earth' may constitute another difficulty for the thinking of IEL. For in parallel, we find L *homo* 'man' and cogns in other branches: Gth *guma,* B *žmogus* and Toch AB *šom/šaumo,* all 'man' (71). This is indeed curious since there is no early IE text presenting man as springing out of, or being generated in some other fashion by, Earth. This notion is prevalent in the Near East: in Mesopotamian *Atrahasis,* IV-V, Mother Earth or

Womb-goddess, wise Mami Belet-ili fashions humans out of lumps of earth (but mixed with the substance of a god killed for the purpose: Dalley, 14-7); in the Judaic *Old Testament* early in 'Genesis', God makes man out of earth and breaths life into him; in Egypt, potter-god Khnum fashions men out of mud on his wheel. In a Greek myth, the survivors of the Flood, Deukalion and Purha, throw stones behind them and these become human beings; in the Vedic Tradition, the baby-girl *Sītā* is discovered in a furrow in a field: neither myth suggests the spontaneous generation of mankind from earth. So it is difficult to see why the same lexical entity refers both to 'earth' and 'man'. We must assume that this occurred when people thought that man was constituted only of earthly materials. Here S perhaps suffered the loss of this stem for 'man'. But there is another curious aspect. Toch A/B have for 'earth' *tkam/ kem* which are not necessarily cognate with 'man' *śom/śaumo*. Gm has not the IE stem for 'earth', only *guma* for 'man'. Lith *žēme* 'earth' and *žmogus* 'man' may not be cognates. The case is not at all clear. Be that as it may, this aspect does not nullify the generation from √*kṣam* of the other nouns (including *kṣam-* 'earth')and the vb conjugation or the fact that the other branches lost their cogns of vb *kṣamate* and other derivatives.

32. Of the animals, a most revealing case is the mouse (208). The cogn stem does not appear in C and B; S has *mūs*, Gk *mūs*, L *mūs*, Gm *mus*, Sl *myšū*, Alb *mī* and Arm *mu-kn*. These stems hang isolated in all these languages. In S again we find a full vb √*muṣ* > *muṣ-nā-ti* 'steals' and a large family of related words: *mūṣ-aka* 'stealer, mouse' (cf √*car* 'move' > *caraka* ; √*yāc* 'ask' > *yācaka*); *muṣ-īvan(t)* 'robber', *muṣka(ra)* 'testicle'; *muṣṭi* 'clenched fist'; etc. Again S displays OC whereas the others show break-down and heavy loss(es).

33. The European branches fare worse with 'rain' (118). Only S, Gk and C have a cogn stem with a sibilant **ṣ/s** before the final vowel. Some would include ON *ur* 'fine rain' but this should rather link with *vār/our-* 'water' since it lacks the

sibilant. Only S has a cogn verb √*vṛṣ* > *varṣati* and other forms (with *pra-*) and words like *vṛṣṭi* 'rainfall', *vṛṣan* '(impregnating) strong, bull', *vṛṣṇi* 'manly', *varṣuka* 'full of rain', *varṣṭṛ* 'rain-maker' etc. Here, the loss is total in L, Gm, B and Sl and quite severe in Gk and C where the nouns for 'rain' stand quite isolated.

34. Consider also 'wind' (141). Apart from Gk, all branches have the common cognate: S *vāta/vāyu*; L *ventus*; C *gewynt/awel (avel)*; Gm *wind-s* (Gth, OE); B *vej-(a)s*; Sl *větrŭ*. Yet Gk does have the cogn verb *aē-mi* 'I blow', as do S, Gm and Sl (269). But some details are worth examining further. The stems in L, in C *gewynt* and in Gm have **n** unlike S, B and Sl and C *avel*. It may be argued that the -n- is original and was lost in the other stems. But the four stems of the vb, S *vā-*, Gk *aē-*, Gm *wai* (Gth)/ *waw* (OE) and Sl *veja-* have no **-n-**. So it is much more probable that the original root had no *-n* and that this is intrusive. Frankly, I suspect that the L *vent*, C *gewynt* and Gm *vind/wind* are not true or immediate descendants of PIE. It is possible that this stem (with *-n*) came from a non-IE language and was adopted because of its similarity to the IE one. Be that as it may, Gk has no IE stem for 'wind' although it has the IE cognate vb 'blow' with which is linked with *aēr* 'air/dampness'; L, C and B have the IE stem for 'wind' but not that of the vb 'blow'. Here again, while C and B lacked an early literature, L certainly did not. S *vā-yu* is a regular formation, like *pā-yu*, *man-yu* etc; so is *vā-ta*, of course, with the participial *-ta* (as in *āp-ta*, *kṛ-ta*, *mṛ-ta* etc etc).

35. Latin shows a similar loss in 'curve, hook' (159) and the vb 'bend, curve' – and so does Gk. Gm, B and Sl lack the common cognate, but not the others: S *aṅka*, Gk *ogkos*, L *uncus*, C *ēkath*. Here only S has a cogn verb 'bend, curve' in √*a(ñ)c* > *a(ñ)cati*. Ignoring other branches we see that L has additional cognates *ancora* 'anchor', *ancus* 'servant (= one who bows)', *angulus* 'angle'; Gk too has additionally *agkalē* 'crook of arms (for embrace)', *agkōn* 'elbow', *agkos* 'valley (=hollow in ground)', *agkulo-* 'curved'. But neither

has a verb related to these stems. The S vb -a(ñ)c- has an early Vedic pedigree and is quite productive: *aṅkasa* 'horse-trapping', *aṅkura* 'sprout, swelling', -*añc* 'turned toward', *añcala* 'garment-border' etc. No cogn verb appears in any other branch.

36. The act of 'seeing' (349) reveals much the same. A stem *darś/derk/tarh*- is common to all except B and Sl. Of the five, S has *dṛṣṭi*, Gk *derxis* and C *ro-darc* for 'sense of sight'. Some branches have a participial adj but with differentiated meaning: S *dṛṣṭa* 'seen' fully coherent with the root; C *an-dract* 'dark, not lit' (obvious deviation from vb and 'sight'); Gm *torht* 'bright' (also deviation and different from C); Alb *drite* 'light' (deviation); C has also noun *derc* 'eye'. Again only S has a large family with consistent meaning 'seeing': apart from *dṛṣṭi* it has *dṛś, dṛśi , darśa(na)* , *didṛk-ṣu* 'desiring to see', *draṣṭṛ*, etc, and cpds like *tā-dṛś*, 'such-like'. On the other hand, S does lack the present tense of *dṛś*- having *paś-yati* instead. (This situation is very much commoner in other branches, as we have seen.)

37. In this cognation we observe again the phenomenon of vowel gradation. The S medial -ṛ- develops into -*ar*- , -*ār* (guṇa and vṛddhi) and sometimes into -*ra*- (see §19, end). *The* -*ra*- *may seem unexpected* in place of *darṣṭṛ (like √kṛṣ 'ploughing'> kar-ṣṭṛ, √vṛṣ > varṣṭṛ etc), but it is an alternative formation (perhaps different dialect) as with √bhṛ > bhrātṛ 'brother', √sṛj 'emit' > sraṣ-ṭṛ 'creator', √spṛś 'touch' > spraṣ-ṭṛ etc. However, there is no regularity in the Gk *derk/dork/drak*- or C *darc/derc/drac* . The changes in these branches are in fact haphazard and don't merit the term gradation which should properly apply only to S vowel-changes. (This is an issue discussed at length in Kazanas 2004, §§ 28-31.).[8]

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[8] The gradation in Gk goes as follows with the vb (pres) *derk-omai,* aor *edra-kon*, perf *de-dork-a*. Vb *perthō* 'besiege, sack' similarly has aor *e-prath-on*, perf *pe-porth-a* . But *perd-omai* 'break-wind has aor *e-**pard**-on* , perf regular *pe-pord-a* . Then *terp-o* 'delight, satisfy' has aor *e-terp-sa* and passive aor *e-tarp-ēn* (no perf attested). Vb *sterg-ō* 'care for, love', aor *e-sterg-,*

38. The nouns denoting 'stream' (131) and the cogn verbs 'flow, stream' (301) show a similar picture. The nouns S *sro-*, Gk *rheu-, rho-*, C *srma-, sru- th* and Lith *srav-, sriov-* are truly cognate. Gm *stro-* and Sl *stru-* may be related to the others but they have the intrusion of -t-. Which of the two groups is right and represents the original stem? This is not difficult. S √*sru* > vb *sravati*, flows', Gk vb *rheō* (and *rheiā*) 'I flow' and Lith *sraveti* 'ooze out, run' have no *-t-*; moreover, no other branch has a cogn verb with *-t-* : So the Gm and Sl stems of the noun should be discounted. It lacks the cognation totally. But here S, Gk, C and Lith support one another fully.

Here we note again the disparities in gradation. C, Gm and Sl have no other cogn nouns or vbs to provide evidence. Lith also provides no evidence of gradation. But Gk, apart from vb *rheō* and m *rhoos*, has the n *rheuma* and *rhuax*. Since the Gk usual gradation is verb-stem vl *–e-*   noun-stem vl–*o-* (e.g. *leg-ō* 'say' etc   *logoos* 'word' etc; *nem-ō* 'apportion' *nomos* 'custom, law'; etc), one wonders how we got *–eu-* and *–u-*. The perfect of this verb has also *–u-* in *errhuēka*. We meet such developments with Gk *cheō* 'pour (in sacrifice)': n *cheuma, chuma*, m *chutēs* and f *chutra*; this vb also has its perf with *–u-* in *ke-chu-ka*. I suspect that this **u**

(later) perf *e-storg-a* . But we find a similar perf with vb *tiktō* 'produce', aor *e-tek-on*, perf *te-tok-a* – and I can't but wonder at the gradation of *-e-* in the aorist! Now, this is not at all regular because *rhipt-ō* 'throw' has aor *er-rhip-sa* and perf *er-rhiph-a*, where the *-i-* is maintained an the *-t-* is lost. Then *pinō* (*pōnō* in Aedic) 'drink' has aor *e-pi-on* and perf *pe-pō-ka* – where the *-n-* vanishes (the *-ō-* of the perf may come from the Aeolic stem). For *klin-ō* 'incline' has aor *e-klin-a* and perf *ke-kli-ka* . Then again *deid-ō* 'be fearful', aor *e-dei-sa*, perf *de-doi-ka*"; but *ktein-ō* 'kill', aor *e-kta n-on* , perf *ek-to n-a* ; *klei-ō* 'close, shut', aor *ekleisa, ke-klei-ka* ; *leip-ō* 'abandon', aor *e-lip-on* , perf *le-loi-pa* ; *peith-ō* 'persuade', aor *e-pith-on* , *pe-peika* ; *speir-ō* 'sow, aor *e-speir-a* , perf *e-sparka*. Consider too : *sphall-ō* 'err', aor *esphē la*, perf *e-sphalka* ; *thall-ō* 'flourish', aor *e-tha l-on* , perf *te-thē l-a* ! There is so much confusion here that only a terrible loss of memory can account for it and, of course, we cannot talk of gradation except as a farce.

(and the Lith **av** in *srav*) represents like S.√*sru* a truer line of descent than all the other forms which must be decayed or distorted. In the circumstances this vl u would seem to have no other good or lawful reason for being there: it is there as an inheritance from PIE.

39. It is difficult to see how from an original PIE **sreu* (as IEL gives this stem) came S √*sru* > *sro-*, *srav-*, *srāv-*, C *sru*, Lith *srav-* and *srau-* and Gk *rhe-*, *rheu-*, *rho-* and *rhu-*. On the contrary, it is very easy to envisage a process as in S √*sru* > *sro*, *srau* (the regular gradation) devolving gradually into all the other related stems including Gk *rheu-* (by corruption of *au* or by analogy with m *log-*< vb *leg-*. The same holds for S √*hu* > *ju-ho-ti* and Gk *cheo*. IEL gives as PIE the "root" **gheu*. But apart from the *che(u)-* no other branch has, or needs, e or **eu**. S has *hu-/ho-*; L has *fŭ*; Gth has *giu-* and Arm *jo-*. Now, as was said, apart from nouns with *−u-* in their stem, the Gk *rheo* and *cheo* have their perf in **errhu**ēka and *ke-chuka*. The vl *-u-* appears generally in the perf of vbs with *-u-* in their present stems: *lu-ō* 'loosen' > *le-luka*, *phu- ō* 'grow' > *pe-phu-ka*, etc. Gk verbs in *−eō* form their stem differently. Thus *deō* 'tie' > *dede*ka and *deō* 'lack, need' > *dede*ēka; *neō* 'swim' > *neneu*ka; *pleō* 'float, sail' > *peppleu*ka[9]; *pneō* (and *pneiō*, like *rheo/ rheio*) 'blow, breathe' > *pe***pneuka**. All these vbs (and others) have no derivative stems with **u**. Only *rheō/rheiō* and *cheō* show the *−u-* development. Is this corruption or innovation? Neither. It reflects the true original stem as in S √*sru* and √*hu* (the *−u-* or other labial vl being present in the cognates of other branches).

These Gk relics, retained by accident contrary to the tendencies of the language, show clearly that the original roots were not **sreu* and **gheu*, and that the S dhātus *sru* and *hu* are much closer to PIE.

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[9] Gk *pleō* 'float, sail' is cogn with S √*plu* > *plavati*, Lith *plauti*, etc. This vb has no derivative stems with *−u-* (unlike *rhe-* and *che-*). It follows fally the pattern of *neō* and *pneō*. Some claim *pneō* is cogn with ON *fnȳsa*/ OE *fnēosan* 'sneeze' but I doubt this cognation because of the *-s-* in both Gm stems.

40. A most interesting case is that of 'smoke' (127). All branches have the IE common stem but in Gk *thumos* means 'spirit, soul, passion' and Gm *toum* is 'steam'. Apart from S √*dhū* and Gk *thú-nō* no other branch has a cogn verb. The L *suf-fire* 'fumigate, scent' is supposed to be a cognate but this shows a phonetic (*fūmus* and *fire*) and semantic ('smoke' and 'fumigation, perfuming') deviation. However, S *dhūma* comes from √*dhū* 'shake (off)'; another derivative is *dhū-pa* 'perfume, scent' and vb *dhūpa-ya-* 'fumigate': so S covers the L *fūmus/-fire* (if this cognation is valid). The Gm *toum* 'steam' is also covered by S *dhū-māya-* 'steams' (as well as 'smokes'). It is not difficult to see how √*dhū* generates in S all these derivatives. Smoke is shaken off by something burning and people often burn herbs or powders to fumigate or create a pleasant scent or a medicinal inhalation. Gk, be it noted, has a secondary derivative *thu-mia-ma* denoting '(the smoke of a) burnt offering'. What is intriguing at first sight is the Gk meaning which refers to man's psychological make-up.

Now the MSD gives also 'a saint' for *dhūma*, as well as 'smoke'. This surely touches on man's inner make-up. The adj *dhūmra* means 'smoke-coloured' but also 'dim (of intellect)'. And *dhūnóti/dhūnuté* can, and at times does, mean 'shake off, remove, liberate oneself from' (MSD under *dhū*). Thus Gk *thumos* 'spirit' is not a deviation – provided we stop thinking all the time of smoke. But Gk preserves another tell-tale detail. It has two verbs *thuō*, or one verb with two different semantic lines: one 'sacrifice' the other 'rush, attach, etc'. It has also *thu-mia-ō* 'burn offering(s)' (>*thu-mia-ma*) which may correspond to S *dhūmāya-*. One would think here are enough verbs. But no, prolix Gk gives us another one, *thunō/thuneō* 'dash, attack'. These forms retain the [-n-] which is also the mark of S dhātus of class V, VIII and IX. √*dhū* is both class V and IX (and VI). So the S √*dhū* covers all the different developments in Gk and Gm.

41. Let us look more closely at the cognates of 'dying'. We have death (98) and the vb dying (291). The cogn noun

for 'death' is found in S, L, B and Sl – S *mṛtyu* etc. The vb 'to die' is in S *mṛ-/mar-/mri-*, in Gk *e-mor-ten* only (in lex), L *morior*, B *mirti* and Sl *mrěti*. Gm knows nothing of this stem. The 'one dead' is in S *mṛta*, L *mortuus* and Sl *mrŭtuǔ;* Gk has only *brotos* and *ambrotos* 'mortal, immortal'. Gk, despite its early and redoubtable literature, has preserved only a few and mostly decayed traces (see also *mar-ain-ō* 'wither'). Sl, despite its late and not all that rich literature has preserved the full gamut and here displays Organic Coherence. B (which here is Lith) has preserved both noun and verb but not the participial adjective. L too here displays OC. But, again, neither L nor Sl retain the range of verbal and nominal derivatives found in S (all Vedic forms): *mara-ti/ te*, etc; *mara(-ṇa), marayu* 'perishable', *marta* 'mortal, (Gk *mortos)* *māra* 'death, pestilence', *mārin* 'killing', *mumūrṣu* 'wishing, about to, die'.

42. Much more revealing is the examination and comparison of the survivals of the root for 'freeing' (305). S has the vb √*mu(ñ)c > mu(ñ)cati* and Lith *maukti* ' strip off, wipe'. Gk and L preserves the stem only in a compound and have no other cognates; moreover, the compounds in both languages denote the cleaning or wiping of the nose. In contrast S has its usual range of derivatives, all Vedic: *-muc* 'freeing, sending'; *mukti* 'liberation'; *mumukṣu* 'eager to free'; *mocana* 'deliverance'; *moktṛ* 'liberator', *mokṣa* 'release'; etc.

43. The cognates for 'shield' (179) provide much food for puzzlement. S does not have this cognate (and Gk *aspis,- dos* gen sing, may not be acceptable, which is unimportant). We have L *scutum*, C *sciath*, Lith *skydas* and Sl *štitŭ*. Lith *skydas* comes from the Gm *sci-d/t* 'plank', which comes from Gth *skaidan* 'to cut'. The Sl stem seems to be related to C *sciath* (despite the difficulty of *sc-* and *št-*). But now the C and the L stems come from a proto-Celtic **scoito-m* or a proto-Italic **scouto-m* which in turn came from a PIE root **sken-* as in S √*sku > skunāti/skunoti/scauti* 'cover'. Indeed, a shield offers cover against missiles of all kinds. There are other

theories too, but we can skip them. Therefore, is 'shield' really PIE?

Now, the fact is that no sort of weapon has a common cognate. So the shield is hardly likely to be so lucky. We have only some pairs: S *aśani* 'tip, bolt', Gk *akōn* 'javelin' (cf Lith *aśnis* 'blade, edge'); S *iṣu* and Gk *ios* 'arrow'; S *dāru*, Gk *doru* 'piece of wood, club, spear'; C *gae* and OE *gar* 'spear'(?); S *paraśu*, Gk *pelekus* 'axe' (probably a loan from non-IE?). Little else worth discussing. There are not clear inherited cogn stems for knife, sword, axe, javelin, bow and arrow, sling, breastplate or corslet and helmet. Most of the cognates of these items are intra-familial loans.

All this is quite extraordinary because the evidence we have from the Celts, the Italic and Germanic people, the Greeks, the Hittites and so on, indicates fairly warlike, rapacious people. So one would expect some at least of the stems denoting weapons to be common to 4 or 5 branches if not all (and here I include Alb, Arm, Ht, Iran and Toch). Yet, apart from 'spear' (182-183) and the questionable 'shield', not one stem is common to 4 branches (only one third of the total)! Were the PIEs really bellicose fellows? We know the IEs in late proto-historic times when they had already dispersed. What of the common condition before the dispersal? Well, we don't know but the evidence of the cognates for military matters is decidedly negative.

44. Another field where there is great divergence of stems is religion. Apart from the stem for 'god' which is common more or less in all branches (S *deva*, L *deus*, B *dievas* etc)[10]

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[10] The Gk stem *theos* is doubted and has been rejected by most scholars; this is based on the notion that Gk *theta* (θ) corresponds only and invariably to S *dh-*. It is true that almost invariably Gk *-th-* = S *-dh-* but there is also S *dvār* 'door' which appears in Gk as *thura*. Then, the conjectural postulate *thesos* as source of *theos* is based only on *thes-phatos* which is hardly a secure basis. The linking with L *fēs-tus* (note the long *ē* as opposed to the short e in Gk and an additional conjecture of a PIE root *dhēs* cannot be taken seriously. So *theos* is not impossible. After all Gk has several aberrant cogns like *hippos* 'horse' (S *aśva*, L *equus* etc, fairly 'lawful' correspondences) or *o-noma* 'name' (S *nāman*, L *nomen* etc), etc.

no other entity idea or item can be found in three or more instances. The cogn 'altar' found in L, C, Gm, B and Sl is, in fact, the L word. Close to forming a cogn group is on the one hand L *precārī* 'pray, beg, beseech' and Sl *prositi* 'ask for' and on the other S *prach-/pṛc-* and Gm *fraihnan* 'question'. But, of course, 'ask' in the religious sense of 'ask for, beg' in prayer (< *precārī*) is very different from 'ask=question'. For 'beg' and 'beseech' S has *prārthaya-, bhikṣ-* and *yāc-*. (And Gk *arFa* 'prayer', L *orare* 'plead', a legal term primarily and secondarily 'pray', and S *āryati* 'acknowledges, praises' are not really related, as some have claimed.)

Here too we find some pairs only that are true cognates: S *yaja-te/ti* 'worships, sacrifices' and Gk *hazo-mai* 'I worship'. From these we have S *yajña/yajñiya* 'holy, sacrificial' and Gk *hagno-* 'holy' and *hagio-* (cf S *yāga-*) 'holy, sacred'. Then there is S *ūh/ohate* 'praises' and Gk *eucho-mai* 'I proclaim' > *pros-euº* 'I pray (to god-s); also Arm *uzem* 'I intend, will': But note here the great semantic differences. With the stem is connected S *vāghat* 'sacrificer, supplicant' and L *vovere* 'pledge, vow'. We also find for 'heaven' (in the sense of 'paradise') C *nem* and Sl *nebo* from the cogn stem as in S *nabhas* 'sky (cloud, mist)'. In other cases the apparent cognates turn out to be loans or derivatives. Thus the cogn stem for 'devil', found as *deoful* and variants in Gm, *dijavolu* and variants in Sl, *diabul* in C and so on, they all eventually come from Gk *diabolos* 'slanderer, distorter'. The C *sacart* 'priest' is a loan from L *sacerdote* and the Sl *iereji* from Gk *hiereus* 'priest'.

Generally, there are disparate terms for 'altar, anchorite, demon, devotion, heaven, hell, prayer, priest, religion, sacrifice, ritual, saint and sanctity, worship' and the like. This diversity shows that the religion and rituals we find in the branches were developed after the dispersal and that the original PIE religion was quite different from what we know of pagan polytheisms. That there was polytheism and henotheism (=worship of one deity above others in a specific

place at a specific time) is undoubted: we find, e.g., the common name S *Aryaman*, Mcn *Areimene*, C *Ariomanus* and Gm *Irmin*, or S *Parjanya*, Sl *Perun(u)*, B *Perkunas* and Gm *Fjorgin*, or S *Dyaus*, Ht *Siu*, Gk *Zeus/Dia-*, L *Ju[s]-*, Gm *Tiwaz*. This shows multiplicity. On the other hand, there must have been a kind of monotheism, since many IE traditions make some effort to define or at least indicate a Primal Source for all cosmogony or a Progenitor for theogonic generations: in Greece, in Homer it is *Ōkeanos* 'ocean-water', in Hesiod *Chaos* and in Orphism *Chronos* 'time'; in the Scandinavian *Edda* it was a Chasm-of-nothing; and so on. In the *RV* it is stated explicitly that all gods are expressions of That One, which is before all creation and all creation evolves from It (*RV* 1.164.46; 3.54.8; 8.58.2; 10.129). Here too, the Vedic Tradition probably retained more faithfully the PIE religious views.

45. I could certainly continue with many more IE stems like those for heating (S *tap-* etc), fainting (S *tām-* etc), tying (S *nah-* etc), moving (S *mīv-* etc), growing (S *vṛdh-* etc), remembering (S *smṛ-* etc) and so on. In all these cases we shall observe what was established much earlier (§ 21): one, S reflects more clearly the pristine PIE roots than any other branch; two, while S has OC in most cases with the full gamut of lexical items in verbs, nouns, adjectives and adverbs, the other branches show severe break-downs and losses in one or more categories.

Of course S is not perfect and I stress this. It, too, has break-downs and losses and innovations. Very curious is the case of S *praśna* 'turban' which is thought to be connected with plaiting (331), Gk *plekō*, etc. It is curious because *praśna* is also 'question' and is a derivative of √*prach* (*pṛch*) 'ask'. Of old, Meillet would not accept Gk *plekō* and S *praśna* as cogn with L *plect*, Gm *fleht-* and Sl *plest-* (1908:37), but this doesn't explain S *praśna*. Just as curious are S *snih-* and *mṛj-*: the former means 'be moist, be fond of, attached' while in all the other branches the cogn stem means 'snowing'(!); in

S the latter denotes 'rubbing, polishing' while the others refer to milking! I give no answer here to the question which meaning is original[11]. As S (or Vedic) is not *the* PIE language, it is natural that it too should suffer losses (and show innovations). But these are comparatively few.

46. The S √*dṛṣ* is a good example. It lacks the forms of the present which are supplied by *paśyati*. IEL regards *paśyati* as a decayed form of **spaśyati* and connects it with L *specio*, Gm *spehōn* 'espy, watch'and Gk *skept-* (<**spekt-*) 'view'. This may be correct but the *Dhātu-pāṭha* gives both √*paś* and √*spaś* so that the Vedic perf *pa-spaśe* (as √*spṛṣ* 'touch', perf *pa-spṛṣe)* may be from √*śpaś* which has the same meaning. Then Tocharian AB have *päk-* 'intend' not **späk-*. So there probably were two dhātus in S – but only one elsewhere. In any event, √*dṛṣ* lost its present tense.

47. The case of 'ear' is instructive. We have two stems. One is the Gk *ous*, L *auris*, etc. Here S probably suffered the loss of this stem. It has the √*av* which includes among its meanings that of 'grasping, perceiving' and also 'hearing'. But surprisingly, in no branch where this stem is found, are there any cognates. In each branch, the vb for 'hearing' (see 318) is unconnected with this stem. Gk has beside *kluō*, the vb (*akouō* and) *akroasthai* 'listen' in which some see the cpd *akro* (edge, end) +**ous* (ear) + *thai* (vb-ending), which, being a derivative, does not explain *ous*. L fares no better: it has *audire* 'hear' and *aus culture* 'listen'. Here some take *audire* < **aus-dh-* with **aus* as the origin of *auris* 'ear'; in *auscultare* they see again **aus-* and *cult-* as with metathesis from *clu-t,* (=S *śru).* But again we have no explanation or cognate for 'ear'. (All these conjectures seem true, and it is interesting that scholars seriously toy about with such complications yet

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[11] Leaning in favour of Sanskrit after all the items examined, I could opt for this language and show speculatively how from the meanings in Sanskrit the other meanings were derived. But this is not the point. To say that the majority is right and therefore Sanskrit meanings are subsequent innovations is too facile; 'democratic' majorities are not necessarily true. So I leave it.

refuse to see the simple formation *mā+tṛ* > *mātṛ́* 'mother', § 25.) On the other hand, C has both the cogn *au* 'ear' and *clua/clust*; its vb 'hear' is *clui/ clyw-*, unrelated to *au* but related to *clu-*! Gm has *auso* (Gth) and variants *eyr/ōra* (ON, OHG) but also *hlyst* (ON); its vb 'hear' is OE *hȳran* and OHG *hōran* and its vb 'listen' is ON *hlȳðan* and OE *hlystan* – neither group connected to *ausō/eyr-* but connected to *hlyst*.

What do we learn from these data? Obviously the *ous/ auris* stems derived from a root like S √*av* and developed in parallel with the stems *srotra/clyst/ hlyst-* in some branches then took over. As the S stem *śrotra* indicates, the ear was the instrument (*–tra*) for hearing *(sru > sro-)*, as *ar-i-tra* 'oar' is the instrument (*–tra*) for propelling (*ṛ > ar-*) a boat, or *vas-tra* 'garment' is the means whereby one dresses.

S supplies the probable explanation (not entirely unnoticed by IEL). S has the indeclinable *āvis* 'evidently, manifestly, observably' related to Au *āvis* and Sl *avě/javě* 'evidently'. IEL suggests that the cognates *ou-s/au-ris* etc are related to this *āvis*; so also the prefix in L *au-dire* 'hear', in Gk *aisthanomai* 'observe, take notice' and Ht *uḫ-ḫi* 'I see'. S *āvis* is related to √*av* which has several meanings: one group is 'favour, promote, protect', the other 'observe, notice' (Mayrhofer). The Dhātupāṭhā gives a long list including *raksaṇa* 'protecting', *prīti* 'favour', *vṛddhi* 'increase, promotion', also *avagama* 'perceiving, understanding' and *śravaṇa* 'hearing'. It is very likely that the stem in *ous/auris* etc appeared before the IE dispersal and many branches retained it (in one or other form), while others retained the 'instrument for hearing' like S *śrotra*. C retained both *au* and *clua-*. S probably reflects the true primitive situation with √*śru* > *śrotra* for hearing and √*av* > *āvis* for general perception.[12]

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[12] Indian philosophy states that the first manifestation is in *ākāśa* 'ether, space' and this is a vibration of sound in silence. Clearly the bodily sense connected with this phenomenon is hearing. Is this idea so ancient as to belong to PIE thinking? For this is suggested by the S √*av* >*āvis* and the ramifications in the other branches. How old is really Indic philosophy (and

There are several other decays and losses in S but as was said these are few in comparison. After all, the numbers in §12 are quite eloquent. Of the 404 stems examined, S lacks 53; next is Gm with 145, Gk with 149 and so on.

48. Oral Tradition and the AIT. How did the Indoaryans manage to maintain an oral tradition of such quality that their culture retained more cultural elements (eg names of deities) and many more lexical items (and grammatical features as any text on IE philology testifies: see Kazanas 2004)?

The only explanation I can think of regarding the superiority in retentions of Sanskrit is that the Indoaryans moved very little or not at all. We saw earlier that they had developed an oral tradition that now seems definitely to have been far more efficient than any of the other branches (§14), since, even as late as the 7th cent CE and even in the 20th, the sacred texts were transmitted orally from one generation to the next within brahmin families. It was an incomparable systematic tradition as we saw in §14, above.

The Aryan Invasion/Immigration Theory has the Indoaryans enter Saptasindhu (which was allegedly populated by Dravidians, Mundas and/or, other speakers of South Asian languages) c 1700-1500 BC. But they did not arrive after a few months' travel from the PIE homeland: they made, according to some recent theories, stops at the Urals where they indulged in cultural exchanges with the Finno-Ugrians, and in Iran in common with the Iranians from whom they had not as yet seperated. Let us now assume that, as most Indoeuropeanists claim, the homeland was the Pontic or South Russian Steppe – even though there is no evidence of any kind for this. The Indo-Iranians move eastward to the (southern) Urals and stay there for three or four generations (or ten: who knows?) in

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its systems) – after putting aside later developments and the AIT chronology?...Tantalizing questions.

proximity to the Finno-Ugrians, then move south, either over the Caucasus west of the Caspian (less likely since Vedic has no evidence of lexical loans from Caucasian languages) or down along the eastern shores of the Caspian, to Iran. Then, after some decades again, the Indoaryans alone move further south-east (in waves?) and settle in Saptasindhu, whence, since by general agreement there was desiccation, they moved eastward to the Ganges basin following the natives who were at the time (c1700) doing just that.

Now, it should be obvious to any unprejudiced mind that a people in continual move over thousands of miles could not maintain the unique systematic oral tradition associated with the Indoaryans. On the other hand this tradition could not have developed *after* they reached the Ganges basin because the *RV* mentions far too often the 7 rivers (I.32.12; 34.8; 35.8; etc, etc) – and even M.!Witzel admits that the *RV* was composed round the river Sarasvat$ area (2001 § 3). So when did it develop since the *RV* already contains the references to the area and all those inherited

It is a well known fact of history that people on the move for a long period tend, especially if they are non-literate, to lose elements of their culture, while their language suffers decay and losses, much more than a people remaining sedentary, as several indoeuropeanists have stated (Hock 1991: 467-9; Burrow 1973: 10; Lockwood 1969: 43); and this because they have little leisure to pass their lore to the new generation and/or they meet with, and absorb elements from, alien cultures. Therefore, either we hold onto our habitual notions and deny the fact that the PP and POC favour the Indoaryans, or we accept the fact that the Indoaryans preserved (in that astonishing *RV*) much more than any other branch and therefore moved very little or not at all.

49. It could be argued that the IAs developed their complex but secure system of oral transmission while on the move. In fact, Mallory did so (Nov 2004 : see § 4 above) – and

cited as example the Jews. But these people were literate certainly when they first appear in history (11th cent BC: Dunstan 1998) or from the time of Moses c1200 BC(?). But, if that were so, what would the IAs (or Indo-Iranians, since they were one people, according to the AIT) be transmitting and thus preserving? Their sacred *RV* was composed in the Saptasindhu. If they had developed their superb system while on the move, then they would have at least a few tales of their adventurous trekking and these would have been embodied in the hymns of the *RV*. The Jews indeed wandered about for many centuries in the Near East, from the time when Abraham and his clan left Ur, c1900 BC (if all this is historically true: opinions are divided for and against), until they finally settled in Judea: so their scriptures tell us. (But note here that Ur in Mesopotamia had literacy for 1000 years earlier, so the Jews probably have had it also.) Not so the *RV*: in the hymns there is not even a hint of this hypothetical travel and its (mis-)adventures. We can therefore forget this empty argument.[13]

50. It may also be argued, as was done by Mallory (2002), that if the Indoaryans retained most and their historical seat (or its environs), is the PIE homeland, then the people who moved a little distance, like the Iranians and the Tocharians, should have retained more than other branches, and those who moved farthest, the Celts and the Germans, should have retained the least. This is not the case, of course, and I certainly mean no such thing by the Preservation Principle. Once a people starts moving away, many other factors come into play and we cannot apply the simplistic formula "more distance, fewer retentions enacting the 'scientist' (whatever this means). The Tocharians provide a good example. They moved

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[13] A much more valid parallel would be the Gypsies who left India in the early centuries CE, moved northwestward through Persia and spread in the Near East, to North Africa, the Balkans and Europe (Hock 1996; Fraser 1995; chs 1-2). Now, they have legends of their travels (at least in Greece) but their language has only just sufficient elements to indicate its Indic origin (like the older one of the Kassites and Mitannis).

comparatively little but their retentions are meagre. Their written records show that they adopted Buddhism. There is no trace in them of the IE polytheist religion, and therefore of IE elements other than linguistic ones. One can only speculate that even before Buddhism came there the people had already forgotten much of their culture.

People leave their native land in large numbers for various reasons. The Pilgrim Fathers left Britain seeking mainly religious freedom. In pre-classical Greece, people left and formed colonies for economic and political reasons. Sometimes some few people may leave for exploration and adventure while others seek to spread their (superior as they think) culture – like buddhist and christian missionaries. Thereafter other factors will influence all these categories (the devoted missionaries to a lesser degree). They may be subjugated; they may meet a very attractive alien culture; they may be very sensitive and may succumb easily to a foreign culture; and so on. Nobody now can know what the Celts, the Germans, the Balts or the Slavs met in their travels across Europe before they settled in their historical homes. Nobody knows why they left in the first place. The pre-historical archaeological researches that trace various movements of people in Europe like the Kurgan ones from the Pontic steppe, as is commonly claimed (i.e. before say 1800 BC) cannot really identify any IE people. Any so called identifications are conjectures in a world of speculation – no more. (It is curious that mainstreamers do not apply 'scientific' standards here also.)[14]

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[14] Not without good reason, Mallory wrote to me (§ 3,4) that we need a time-machine to go back and check the total vocabulary for Vedic, Greek, Latin, Germanic etc, at a given date and then draw conclusions about retentions. This would of course be ideal! But he makes no similar suggestions for so many other AIT areas where arbitrary conjectures with hardly any evidence are rampant. For instance, archaeological evidences regarding identifications of ancient peoples, their movements and languages are very fragmentary and highly dubious. The fact that through

Here let me use an analogy. If one stands precisely on the North Pole of our planet, then one can only move southward: there is no other direction. But once a few steps south are taken, then one can move in many different directions. The simplistic formula "more distance, fewer retentions" does not hold. But, in the circumstances, the PP, exemplified in the Vedic tradition, does hold: most retentions, least or nil distance travelled. So, of course does the POC.

Conclusion

51. Here I rest. I have shown with a large number of lexical items that Sanskrit has many many more retentions of PIE than the other branches. This confirms what my earlier studies had already disclosed. There may be some errors or omissions in my examination of all these cognates but my survey of the Dictionaries and the comparative tables in various publications suggests that if I added more items the gap would widen in favour of Sanskrit. The difference between Sanskrit and the second and third branch is so great that it cannot be ascribed to chance, nor reasons like early literacy. The only plausible explanation for this that I can think of is a strong, systematic oral tradition. Such a tradition could not flourish nor be maintained by a people on the move. So the Indoaryans are indigenous, certainly at the beginning of the 5th millennium and possibly very much

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mechanical repetition these conjectural identifications are generally accepted (see, e.g. § 54, n 16!) means nothing in fact. Surely, here also the time-machine is necessary.

Then there is the other grand conjecture taken as proven fact by indoeuropeanists and indologists of the AIT persuasion – the common or primitive Indo-Iranian period (§ 48). Apart from linguistic conjectures and theories of convenience there is not a scrap of evidence that the Indo-Iranians came as a unified (or closely related) people with a single or common culture from the Steppe, through the southern Urals to Persia and (the IndoAryans) to Saptasindhu. On the contrary, the actual linguistic evidence (not conjectural reconstructions) shows that the Iranians had lived in Saptasindhu and moved north-west. See § 54.

before that. I have discussed at length many other aspects that support this conclusion in many publications since 1999.

52. I should add two more arguments. They will not mean much to the prejudiced minds of mainstream scholars (indologists, indoeuropeanists, archeologists or whatever) but I think these details also add strength to the view against the invasion/immigration theory. I am referring to the absence of clear common cognates regarding military matters (see § 43). This suggests to me that the PIEs were not at all bellicose (though dissensions and even fights should not be ruled out) – at least not as the IEs appear after dispersal in (proto-) historical times. This view is very different from that of other indoeuropeanists who saw war and weapons as an important aspect of PIE culture (e.g. Hencken 1955:44; Childe 1926: 85). A relevant peaceful region for 6 millennia is the area in today's Afghanistan where the culture of Mehrgarh developed and gradually spread south-eastward to Saptasindhu and became there the Indus-Sarasvati Civilization. Archaeologists specialising in the region like M Kenoyer, G.L. Possehl and J. Shaffer, have emphasized its unbroken continuity and its peaceful character – so much so that J R McIntosh termed her study of it *A Peaceful Realm* (2002).

53. Another argument comes from the field of religion. The Veda has more common IE theonyms than any other branch and fills lacunae in the other branches. V *Agni*, Ht *Agnis*, Sl *Ogon*; V *Aryaman*, Mcn *Aremeine*, C *Ariomanus* (and *Eremon*), Gm *Irmin*; V *Parjanya* , Sl *Perŭnŭ*, B *Perkunas* , Gm *Fjorgyn*; V *Dyaus* , Ht [D] *Siu* , Gk *Zeus* , L *Jupiter* , Gm *Tiwaz*, Sl *divu* V *uṣās* , Gk *Ēōs* , L *Au[s]rora* , Gm *Eos-tra*; V *Bhaga*, Sl *Bogu* , Phrygian *Bagaios*, Gk *Phoibos* (where S *bh* = Gk *ph and* S *g*= Gk *b* are frequent correspondences)*.* These 6 correspondences show the situation adequately; in fact, only the *Dyaus* cognates are found in 6 branches. (For a full discussion of this matter see Kazanas 2006.) Moreover, as I have argued elsewhere following K Werner (1989), the all-inclusiveness of the *RV*

(in contrast to the other branches which have only polytheism) contains also a kind of monotheism or monism (Kazanas 2001: 288-9): this universe with its multifarious manifestations came from an original unity (*RV* X, 129) which is no different from the upanishadic Absolute: 'It being One has variously become this All (and Everything) – *ékaṃ vā idāṃ vî babhuva sárvaṃ* (VIII, 58, 2). Then, while wise poets speak of It, being One, in many ways and name It Agni, Indra, Yama etc (I 164, 6; X 114, 5), the different gods are gods by virtue of a single godhood or god-power, as the refrain in III 55 reminds us clearly: *mahád devānām asuratvám ékam* 'Single is the great god-power of the gods'. It was, I suspect, this religion, containing the One and the many as expressions of the One, as indicated in the *RV,* that was fragmented into the many different polytheist cultures of the Indo-Europeans after their dispersal.[15]

54. One may still entertain doubts about my thesis. But, while the Kurgan culture of the Steppes as the PIE source is a mere nebulous supposition, held on tiers of conjectures, no other early IE tradition contains so much evidence in its language and culture as to surpass the Indoaryan claims for the more faithful inheritance of the PIE civilization[16].

Another aspect mainstream indoeuropeanists and indologists (of the AIT persuasion) often stress is the common

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[15] E. C. Polomé made a survey of 'Indo-European Religion and the indo-European Religious Vocabulary' (1991) . In it he examined many studies on this subject by G. Dumézil, J. Gonda, P. Chantraine, H. Hubert, Gamkrelidze & Ivanov, et al, but could not come up with more than 3 or 4 sure cognate stems like those for faith, fire, and prayer, already examined in this paper.

[16] "Archaeologists have not in fact succeeded in locating the Indo-Europeans and prehistoric Eurasia offers an abundant choice of culture areas" (Watkins 2000: XXXIV). This factual statement is followed, as is usual with mainstream indoeuropeanists, by a long series of conjectures presented as historical facts identifying waves of Kurgan expansion as PIE movements, and then: "We must be content to recognize the Kurgan peoples as speakers of certain Indo-European languages and as sharing a common Indo-European patrimony. The ultimate 'cradle' of the Indo-Europeans may well never be known" (ibid XXXV). Why should we be

Indo-Iranian period (§ 48 and n 15). This too is based on tiers of IEL conjectures. On the contrary, the actual linguistic evidence (not conjectural reconstructions) shows that the Iranians had lived in Saptasindhu and at some date moved away, north-westward. The *Avesta*, as has repeatedly been pointed out (e.g. Kazanas 2002), refers to a region formerly inhabited by the Iranians by the name *HaptaHə̄ndhu*. Now this is as close to the Vedic *Sapta-sindhavaḥ* '7 rivers' as one can get – and there are many occurrences of this phrase in the *RV* (I. 32.12; II.12.3; IV.28.1; VIII.24.27; etc). V *sindhu* is a common term for 'river' and for the river Sindhu which even Greeks named *Indós*; but in Avestan 'river' is denoted by θ*raotah-* and *ravau-* (perhaps from the PIE root seen in S √*sru/sṛ* , Gk *rheō* etc; VIII.301 in §11) thus it is not likely that the IAs left the Iranians taking with them this isolated name *Hapta Hə̄ndu* which then they foisted onto the 7 rivers in Punjab and the second component onto the Indus itself. Rather, the Iranians left the region of the 7 rivers and held the name in their memory. Something very similar happens with the V river-name *Sarasvatī* and Av *Harahvaiti-*. Avestan has no other cogn with *harah-* whereas S has √*sṛ* > *sarati/sisarti, sara.a, saras, sarit,* etc, etc and of course cognates are found in other IE branches: (Kazanas 2003: §43e): here again it is the Iranians that took with them the memory of the Indic river and gave it to a river in their new habitat. Then, we have the alleged loans from the Finno-Ugrians: one of them is V *chāga* 'he-goat'. But it is curious that Avestan does not have this stem: its own stem for goat is only *būza-*. Are we to suppose

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content since there is a choice of other areas? Of course, since the Kurgan people had no writing we don't know what language(s) they spoke and, in any event, no indoeuropeanist has come up with any evidence of any people (Kurgan or other) moving into Saptasindhu after c4500! Thus Saptasindhu has as far as I am concerned the best claim so far – if not the only good one. But I am not certain and don't press it though I shall continue to argue in its favour against the Steppe (which **may have been a locus of secondary dispersal).**

that somehow the IAs, in departing from the Iranians, managed alone to retain apart from the alleged loanword *chāga* the words *aja* and *eḍa* 'goat' – cogn of course with Gk *aix* , Lith *ozys* and Arm *aic* and also the first component of Av *iz -aēna* 'leathery', but that the Iranians, even though now settled, mysteriously lost these stems having only this *būza*?[17] Surely, here too the movement is the reverse – from Saptasindhu to Iran. Moreover, Vedic retains the PIE s but this becomes **h** in Avestan. All this actual linguistic evidence and the conclusion it forces upon us has some archaeological/ geographical support. G Gnoli, who is a normal AIT adherent and by no means an indigenist, showed very clearly that the early portions of the *Avesta* hardly know northern and western Iran and he analyses migrations there from south to north and east to west but not northwest down to south-east (1980). Thus while the conjectural Indo-Iranian movement south-eastward contains many anomalies, the Iranian movement from Saptasindhu north-westward accommodates all facts.

Finally we must remember that, as Thomas Kuhn ably demonstrated (1970) and thus angered many scientists,

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[17] Some connect this *būza-* with OE *bucca* (OHG *boc*) and C *boc(e)* : this surely is highly dubious. But in any event we must wonder at the disappearance of *chāga* from Av. There is also the stem *kūpa* 'hole, well' (Burrow 1973: 27) which is not found in Av but retained by Vedic; this has cogns in other IE branches like Gk *kupē* 'hole', L *cūpa* 'cask', Gm *hūf-r* 'ship's hull', etc. Whether the word came from Finno-Ugrian or PIE it is curious that Av lost it remaining with the non-IE and non F-U *xāu-* and *čāt-* for 'well'; for the Indo-Iranians must have commonly used wells (and must have had 'holes, pits') in their common habitat before they Indoaryans moved onward. The S word *kapha* 'phlegm (foam, froth)' is found in Av as *kafō* (Persian *Kaf*) and in various forms in F-U like *hab, khowu* etc (ibid). But the S *śalākā* 'splinter, twig' (cf *śala* 'staff') has again cogns in F-U but is not found in Av (or Persian or other related language). These phenomena are unexplainable by "the common Indo-Iranian period" and travel south-east. On the contrary they can be explained quite rationally by the movement of Aryans away from Saptasindhu first to Iran and thence to the Urals (and further West).

mainstream ('orthodox' or 'normal') doctrines forming the prevalent 'paradigm' have philosophical and/or psychological constituents as well; therefore scholars, who usually like to think of themselves as reasonable people and authorities in their fields, resist, ignore or cover up anomalies that undermine the mainstream doctrines and act almost invariably so as to preserve the paradigm within which they operate. The classic example is found in the 16th and 17th mainstream scholars who not merely resisted the Copernical heliocentric model of our solar system while themselves adhered to Ptolemy's geocentric model, but actually persecuted their opponents – Bruno, Kepler, Galileo (Cohen 2001; Kuhn 1970; Koestler 1964). The partly self-contradictory remarks of C. Watkins in n 15 demonstrate this in the IE field; also J. V. Day promotes the 'Kurgans' even though in his voluminous study he states that "the ancient cranioskeletelal evidence in Europe for expansion by Kurgan groups is **surprisingly meagre** in places" (2001: 317; emphasis added). I should refer also to the field of biological sciences and the enormous resistance mainstreamers display against new ideas. It is not only philosophical and psychological elements (=prejudices) that engender this resistance but also threats to one's reputation, scrambling for position in the hierarchy or posts prestigious and remunerative, access to funds and the like (Pert 2002: 73, 161-2, etc; Dembski 1998: *passim*).

In Indology and Indoeuropean studies the received doctrine has for over a century been the Aryan Invasion/ Immigration Theory while the IE diffusion spreads from the Pontic Steppe. On this, Edmund Leach, Master of King's College, wrote that after the discovery of the Indus-Sarasvati Civilization, indoeuropeanists should have scrapped their theories and linguistic reconstructions "and started again from scratch. But this is not what happened. Vested interests and academic posts were involved" (1990). This may sound harsh but prejudice and self-interest still continue today and are no less rampant in the humanities than in the sciences.

Appendix

In the Table of Vedic and IE theonyms, the 20 Vedic names are put on the left and the others on the right for the simple and almost incredible reason that the Vedic tradition has all these theonyms but every other branch has only few of them; consequently if we were to start with, say, Ht, we would very soon have to change to another branch, say, Greek and then, Gm, and so on. In fact no two other traditions (Gk, Gm, L etc) have a common theonym to the exclusion of the *RV*. The only exception – and this a highly dubious one – is the Roman goddess *Iuventas* and the Irish *Oeagus,* according to Dumézil from PIE **yuwṇko* (Littleton 1973: 61, 93). This is so tenuous that I don't include it. One can prove many things with untestable reconstructions like this one. Moreover, the two branches, Latin and Celtic, are thought to have been one, or very closely contiguous, and so the two names, if indeed they are cognates, need not be inherited but an intra-familial loan, as Bloomfield would argue for such branches (1933: 350-60).

On the right, on the top line are the cognate names. On the line(s) below are cogn nouns in branches that do not have the corresponding deity. This shows that the particular branch(es) suffered a loss in their religion. E.g. the IE theonym for a Horse-deity (S *Aśvin,* Mcn *Iqe-ja,* C *Epo-na*) does not appear in most branches yet these do have the IE stem for 'horse': Gk *hippo/ikko-,* L *equus,* C *ech,* Gm *eoh,* B *ešva* (and Sl *kon-ji* which is not IE but, though unrelated, does indicate a further loss).

With the theonyms I follow the English alphabetic sequence since this is common. Only Apāṃ Napāt is placed in apparently wrong place, but only because the cognates are in connexion with *Napāt* not *Apāṃ*. The S *ṛ* is given as E *r*. With the branches themselves, I start with India and move westward: S, Ht, Ks, Mt, Gk, L, Sl, B, Gm, C. Tocharian, Arm and Alb contain negligible material.

The Table.

Agni :	Ht *Agnis*; Sl *Ogon*. L *ignis*, Lith *ugnis*, Ltt *uguns* (Note: even the Iranians who had Fire-worship did not preserve this name, not even as a demon like Indra, Sauru etc, though the stem appears in the name *dastayni*). Ht 'fire' *paḫḫur*.
Aryaman :	Mcn *Are-mene* ; Gk *A rẽ-s* ; C *Ariomanus* (Gaul) / *Eremon* (Ir); Sc *Irmin*. The ar-stem in most IE languages 'move, rise, stir'.
Aśvin :	Mcn *Iqeja* (horse-deity); C *Epona* (Gaul); Gk *hippos*, (Mcn *iqo*, dialect *ikkos*), L *equus*, OE and Ir *eoh*, B *ešva*, all 'horse'.
Bhaga:	Ks *Bugas*; Phrygian *Bagaios* (Zeus, Gk); Gk *Phoibos* ; Sl *Bogu*.
Bṛhaddivā :	C *Briganti(a)*, later St *Brighid* (Ir).
Dyaus :	Hittite [D] *Siu-s* ; Gk *Zeus/Dia-*; L *Ju[s]piter*, Gm *Tiwaz*; Rs *Divú*(?). Lith *dievas* (usually 'god' cognate with S *deva*, *div*).
Indra :	Ht *Inar(a)*; Mt *Indara*; Ks *Indaš*; C *Andrasta/Andarta*. Gk *anēr/andr-*; Av *indra* (a demon).
Marut-as :	Ks *Maruttaš* ; L *Mars* ; C *Morrighan* (Ir). The stem *mar/mor/mer-* 'shine' etc is common in all IE branches.
Manu :	Gm *Mannus* (in Tacitus *Germania 2)*, father of the Gm people, like the V semi-divine figure who was regarded as the father of mankind.

Mitra :	Av *Miθra* ; Mt *Mitrasil.*
	Gk *mitra* 'band for chest or, mainly, hair' (> E *mitre* 'bishop's pointed headīgear').
Apām-Napāt:	Roman *Neptunus* ; C *Nech-tan* (Ir); Gm (ON) *sævar niðr* 'kin of water (=fire)'!
	Gk *a-nep-sios*, L- *nep-*; OHG *nevo*, OE *nefa*, OLith *nep-* etc 'nephew, cousin'.
Parjanya :	Sl *Perunŭ* ; B *Perkunas* (and variants); Sc *Fjörgyn* (*-n,* Thor's mother). L *spargo* 'throw about, besprinkle', C *eira* 'snow'.
Ṛbhu :	Gk Orpheus; Gm *Elf* (and variants). Gth *arb-aips*; Sl *rabŭ*, Rs *rabota* 'work' ; L *orbu* (S *arbha*, Gk ὀρφανος) 'deprived' etc
Saraṇyu :	Mcn & Gk *Erinus, Helenē.*
	L *salio* 'leap', *salax* 'fond of leaping'; Toch B *salate* 'leaps'.
Sūrya :	Ks *Śurias* ; Gk *Hēlios* ; L *Sol* ; B *Saule*. Gth *savil*, ON *sol*, W *haul*, Sl *slunice*, Rs *solnce*.
Tvaṣṭṛ :	Gm *Twisto* (Sc).
Uṣas :	Gk *Ēōs* ; L *Au[s]rora* ; Gm *Eostre*. Lith *auśra*, Ltt *ausma*, C *gwawr*, etc.
Varuṇa :	Mt *Uruwna* ; Gk *Ouranos*; B *Vēlinas* ((and cf *jur-* = sea). L *ūrina* , ON *ver* (=sea).
Vāstoṣ-pati :	Gk *Hestia* ; L *Vesta.*
	Gth *wisan* 'to stay'; OHG *wist* 'inhabiting'; Toch A/B *waṣt/ost* 'house'.
Yama :	Sc *Ymir.*
	L *gemi-nus* 'twin'; Gk *zēmia* 'damage', Av *yam, Yima.*

3. Rigvedic All-comprehensiveness

Abstract

The *Ṛgveda* contains and seems to preserve more common elements from the Proto-Indo-European Culture than any other branch of the family. This essay examines various points of language, poetry and philosophy but it focuses mainly on grammatical elements, lexical and syntactical, and on aspects of (fine) poetry. This is one aspect showing that Vedic and its culture is much closer to the PIE language and culture. Moreover, it shows that it is most unlikely that Vedic moved across thousands of miles over difficult terrains to come to rest in what is today N-W India and Pakistan, in Saptasindhu or the Land of the Seven Rivers. Certain other aspects show that Iranian moved away from Vedic and Saptasindhu and most probably the other branches did the same at a very distant but undetermined period. Finally, monotheism is also a notable feature in the *RV* despite its pronounced polytheism.

1. Max Müller wrote early on:

"[A]s in his language and in his grammar [the Indian] has preserved something of what seems peculiar to each of the northern [Indo-european] dialects singly, as he agrees with the Greek and the German where the Greek and the German seem to differ from all the rest ... *no other language has carried off so large a share of the common Aryan heirloom* – whether roots, grammar, words, myths or legends" (1859:14 square brackets and italics added).

In other words, the Vedic culture preserves more elements of the IE (=Indo-european) heritage than any other extant IE branch.

Let us start with some common IE names of deities.

2. Theonyms: names of deities in the *RV* and other branches.

There are more than 20 such theonyms in the *RV* alone (Kazanas 2009c: ch3). Here we shall look at 6 of them only: Agní, Aryamán, Dyàus, (Apā́m-)Nápāt, Sū́rya, Uṣás.

Agní :   Hit *Agnis*; Sl *Ogon/Ogun*.
            Lat *ignis*, Lith *ugnis*, Lett *uguns* – all 'fire'. Iranians had as demons Indra, Saurva but, despite their fire worship, preserved only in proper name *Dašt-aγni*. For 'fire' Ht has *paḫḫur*, Gk *pur-* and Gm *fyr-* and variants; so it would have been more natural for Hittite to have a fire-god whose name was related to *paḫḫur*! (Note: Av = Avestan = Old Iranian; Lithuanian & Lettish = Baltic; Sl = Slavic, i.e. Old Bulgarian, Russian etc.)

Aryamán : Av *Airyaman;* Myc *Areimene* (Gk *Are-s?*); Celt *Ariomanus* (Gaul), *Eramon* (Ireland); Germanic *Irmin*.
            The stem ar-/*or-* 'move, rise' in most IE branches: Gk *or-numi* 'rise', Lat *orior*, Gm *rinn-* 'run'; Arm *y-ar-ne* 'rise'; etc .

Dyàus :   Hit *D-Siu-s* ; Gk *Zeus/DiFa-*; Lat *Ju[s]-pitar Iov-;* Gm *Tiwaz*; Rus *Divu*(?); Av *dyaoš*.

Apā́m-Nápāt : Av *Apām-Napā*; Lat *Nept-unus*; Irish *Necht an* (*-p*-changes to other consonants).

Sū́rya :   Kassites *Śurias* ; Gk *Hēli(F)os*; Lat *Sol*; Gm *savil/sol*; Welsh *saul*; Slavic *slunice/solnce*: all 'sun'.

Uṣás :   Gk *Ēōs* ; Lat *Au[s]-rora* ; Gm *Eos-tre*. Av *ušah-*; Lith *aušra*, Lett *ausma*; Celtic *gwaur*; etc.

Vedic 6; Greek 4; Latin 4; Germanic 3; Hittite 2; Slavic 2; Celtic (Irish, Welsh, Gallic) 2.

(Note, the *RV* is considerably smaller than the Greek corpus consisting of Homer, Hesiod, Aeschulos, Pindar and so on.)

But, moreover, the stem for the natural phenomenon 'fire' does exist in some of them, like *ignis* in Latin, *uguns/ ugnis* in Baltic; or the 'sun' in Gm *savil/sol*, Celtic *saul*, Slavic *solnce*; and so on. Clearly, the other branches lost the theonyms. And no two branches have a theonym in common to the exclusion of the *RV*! Note also an additional feature connected with the Sungod. In Greek *Hēlios* is masculine and has retained the gender to modern times. In Germanic the sun acquired the feminine gender and is now *die Sonne*. Vedic had both: *Sūrya* was the male Sungod and *Sūryā* the divine Sunmaiden who accompanied the twin Aśvins, the Horsegods of the twilight.

3. Poetic Art.

Germanic had alliterative poetry. E.g. in Modern English *Roll on, roll on you restless waves* where the *r* repeats; or *Do not go gentle into the good night* where the *g* repeats. *If all would lead their lives in love like me* where the *l* repeats.

Greek had strict metrical structure. Homer's heroic hexameter in his epics and others with variants of iambic, dactylic, trochaic metre etc – but not alliteration.

pán tas gar phi lé es ken   ho   dōi é pi oi kí a naí   ōn

'he entertained all living in a house on the high road':
Homer: *Iliad* 6, 15 (no alliteration).

hós   min   xeì   non e ón ta   ka té kta nen hōì e nì oì kōi

'he killed him who was a guest in his house':
Odyssey 21.27 (same as above) strict metre only.

In Germanic poetry we find the opposite: alliterative

verses but no strict metre. Take an example from *The Seafarer* 44-45, an Old English poem:

> *Ne biþ **h**im to **h**earpan **h**yge ne to **h** ring þege,*
> *ne to **w**ife **w**yn ne to **w**orulde hyht...*

'His thought is not for the harp nor the receiving
of rings, nor joy in a woman nor pleasure in the world'.

Modern English verse has metre and alliteration:

If   all would lead their lives in   love like   me :
⌣ ×| ⌣   × | ⌣ × |⌣   × | ⌣   ×|

This is the Iambic pentameter with stress, which substitutes the length of vowels.

Vedic has both alliteration and fairly strict metre: e.g. from *RV* 6.47.29, with Triṣṭubh structure, i.e. eleven syllables and strict cadence ‾ ⌣ ‾ ‾ .

*sá **d**undubhe sajúr índreṇa   devaír*
⌣ — ⌣ — ⌣ — — —⌣

***d**ūrád   **d**áviyo ápa sedha śatrún*
— —   ⌣— ⌣⌣ —⌣ — —

'O drum, along with Indra and the gods, do
drive our foes to farthest distance'.

It has both alliteration and the fairly strict metre of Tṛṣṭubh with 11 syllables in each quarter of the stanza and also assonance (u,u,ū,e,e,e;ā,a,a,a,a,a.)

Riddles are found in all traditions, all nations. Here are two from *RV* 8.29.5,7:

tigmám éko bibharti hásta áyudhaṃ
śúcir ugró jalāśabheṣajaḥ:
'One, bright [and] fierce, with cooling remedies,
carries in his hand a sharp weapon'. (*jalāśabheṣajaḥ*)
tríṇy-éka urugáyo vícakrame

yátra deváso madanti:
'One, far-going has made three strides
to where the gods rejoice'. (*urugáyaḥ*)
The two clues signal Rudra and Viṣṇu respectively.

I close this section with the words of Calvert Watkins:
"The language of India from its earliest documentation in the
Ṛgveda has raised the art of the poetic figure to what many
would consider its highest form" (2001: 109).

One of many splendid stanzas: 3.54.8

víśvéd eté jánimā sáṃvivikto
mahó devā́n bíbhratī ná vyathete;
éjad dhruváṃ patyate víśvam ékaṃ
cárat patatṛ víṣuṇaṃ vijā́tām.

'The two truly encompass (*saṃ-*) and sift all births/
beings, bearing the mighty devas, yet do not stagger. Moving
yet fixed, the One governs the whole, what walks and flies-
the manifold manifest creation.'

Apart from alliteration and rich assonance with *vi*
especially, note that the neuter gender affords multiple
interpretations (*viśvam ekam*). Or take 4.40.5:

haṃsáḥ śuciṣád vásur antarikṣasád dhótā vediṣád átithir
duroṇasát;
nṛṣád varasád ṛtasád vyomasád abjā́ gojā́ ṛtajā́ adrijā́
ṛtam.

'The swan in the clear brightness, the Vasu in midsky,
the summoner at the altar, the guest in the house; what is
in men, what is in excellence, what is in Natural Order,
what is in heaven; what are born of Waters, of light, of
Cosmic Order, of the Unbreakable – that is the Law'.

Here the art is based on the repetition of *-sad* 'being,
dwelling, sitting in' and *-já* 'born of'. In the first two pādas
we see a descent from the brightness of the sky down to
a house; then in each of the other two we see an ascent.
Of course *go* commonly means 'cow' but often denotes 'light'

and this must be the sense here; similarly *ádri-* usually means 'rock, stone, mountain' even 'cloud, lightning' but the basic sense is 'unbreakable' (probably from a form of √*dṝ* breaking (through), piercing' and the negative *á-*). Natural Law shapes and runs through all phenomena and this alone has permanence – it is implied – whereas all else is like a passing guest.

There are many other passages I can cite, like 2.21.1 where we find the repetition of-*jite* or 10.67.13 with repetition of *svasti* etc. We find also all figures of speech that form fine poetry from *atiśayokti* 'hyperbole' (eg 3.55.7 etc) and *upamā* 'comparison (simile)' (with *iva*, *na*, etc) to *yamaka* 'assonance, paronomasia' (4.1.2 etc) and *śleṣa* 'harmony, pun' (6.75.17 etc) but discussing them would lengthen this essay unnecessarily. The words of Watkins should suffice.

4. Grammar.

Sanskrit, according to Burrow is "more readily analysable, and its roots [=dhātu] more easily separable from accretionary elements than is the case with any other IE language" (1973: 289). Indeed, consider how from simple *dhātus*, that are also nominal stems, arise nouns and adjectives and verbs in tenses and moods. Or as Elizarenkova put it, "the verb-root is basic to both inflexion and derivation ... it is irrelevant that for some roots such nouns are not attested" (1995: 50) – except that simple "seedform" would be better translations for *dhātu*.

a) Dhātu or root-form and derivatives.

√*cit* 'perceiving, being conscious of' > *cit* adj 'one cognizant, perceiving' or (f) 'awareness, cognizance, perception'; '*citī* 'understanding', *citrā* 'bright, excellent, variegated', *cétas* 'splendour, intelligence' *caitanya* 'consciousness'; verb forms – *cétati*, *cittā*, *cikéta*, *ācait* etc etc, where the principal or vowel gradation (i>e>ai) unfolds in

regular order. We could take also √*ad* 'eating', √*iś* 'ruling', √*ṛc* 'praising, reciting', √*krudh* 'anger', √*jñā* 'knowing' etc etc. But compare S *hu and Greek cheō*.

S √*hu* 'sacrificing, pouring into fire' > verb and noun forms *jú-hu-ati, hutá, hótum, hótṛ, hóma, áhauṣit* – etc, etc, where the principle of vowel gradation (*u>o/au*) unfolds regularly and beautifully. Now compare this with the chaos in –

Greek   *chê-ō* 'I pour' : *che-û-ma* 'flow, stream'; *chû-ma* 'fluid';

cho-ē 'libation, pouring'; *choû-s* 'earth, soil': root? *che-, cho-, chū-* (=S *hu > juhóti)?*

Or compare another probable pair of cognations: –

Sanskrit   :√*dhṛ* > *dhariṣyáte, dadhré, dhṛtvā, dhṛtí, dhara, dhartṛ, dharṇaṣí, dhárma-, dhāra, dhāraṇa* etc.

Greek :   *thranío* 'stool', *thrónos* 'throne', with vowels *a, o* but no root or verb.

b) Negation & prohibition.

Some IE branches have *na/ne/no* for 'do/must not' (e.g. Latin, Celtic, Slavic, Germanic).

Some have *mā/mi/mē* (e.g. Tocharian, Armenian, Greek).

Sanskrit and Avestan have both *na* and *mā*.

c) The Augment in past tenses.

Armenian had it (with initial consonant in monosyllabic stems only) and Greek had it: e.g. Arm *e-likh* 'left', Gk *é-lipe* 'left'. On the other hand Hittite (*dais* 'he set'), Gothic and Old English *band* 'one bound') and others did not have it.

Vedic has both forms : *ábhet/bhét* 'one feared'', *ádur/dúr* 'they gave' etc. However, it should be mentioned that Homeric Greek has some unaugmented forms (e.g. *philéesken* in § 3 above) and so does the older Mycenaean language.

d) Perfect.

Some branches did not have one (Toch, Arm).

a) Reduplicated perf: Av *ta-taš-a* 'has fashioned'; Gk *dé-dork-a* 'I have seen'; Gm *hait-hait* 'has been named'

b) Simple perf: Av *vaēδa*, Gm *wait* 'has known'; Lat *gnōv-it* 'has learnt, knows' (=S *jñā*) etc.

c) Periphrastic perf: (f form of) main verb + auxiliary verb – as in Engl '*have*' aux + '*gone*' main.

Ht: *markan* (main) + *harteni* (aux) 'cut you have'.

Vedic and Avestan have all three perfect forms.

e) Significant difference between Vedic and Avestan.

Vedic redupl : *ta-takṣa* 'has fashioned', *da-darśa* 'has seen'; Av *tataša*;

simple : *veda* 'has known, knows'; Av *vaēδa*;

periphr : *gamayām cakāra* 'has caused someone to go' (*AV* 18.27.2);

mantrayām āsa (*Brāhmaṇas* etc) 'has advised': i.e. main verb, f acc sing + auxiliary *kṛ-* 'do', *as-* 'be'. BUT in this form –

Av has only with *ah-* (=S *as-*) 'be': *āstara yeintīm* + *ah-* 'must have corrupted'.

Since Av has only verb + aux *ah-*, this indicates that Av separated from Vedic after Vedic developed *as-* as auxiliary. Otherwise Vedic would have aux *as-* first! Let us see.

Mainstream doctrine teaches that original homeland of IEs is the Pontic (South Russian) Steppe, just above the Black Sea. But the direction of movement should be reversed.
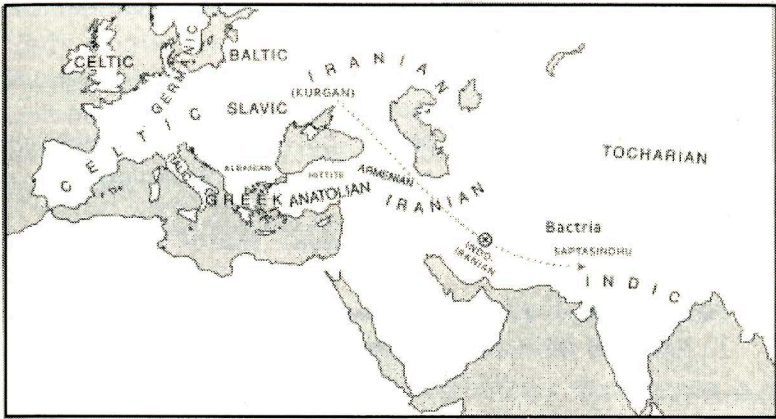
Figure 1.

According to the mainstream Doctrine (the Aryan Invasion/Immigration Theory, actually), the Indo-Iranians formed one unified people then and moved to Iran passing from the Urals. Then the Indoaryans left the common Iranian homeland and moved into Saptasindhu c1500 BCE. (For a detailed discussion, see Bryant 2001.) But if this is true, then they should have had developed first the periphrastic perfect with auxiliary verb *as-* 'to be' like the Iranians, and afterwards the aux *kṛ-*. This evidence shows that first they developed main verb + auxiliary *kṛ-* in *Atharva Veda* and long afterwards main verb + aux *as-* in the Brahmaṇas. Since the Vedics and Iranians are supposed to have been together and since they certainly appear to share so many features in common, this means that they, the Iranians, left the common fold, not the IAs (Indo-aryans)!

Avestan & Sanskrit common features.

	Avestan	Sanskrit	
prohibitive	*mā*	*mā*	'must not';
perfect	*ta-taša*	*ta-takṣa*	'has fashioned';
	vaēδa	*veda*	'has known, knows';
noun	*haoma*	*soma*	'sacrificial drink';
	ahura	*asura*	'lord' (later S 'demon');
country	*Haptahəndu*	*Saptasindhu*	'land of 7 rivers'

Now consider -*həndu* and -*sindhu*.

In Sanskrit the word *sindhu* has several related words: e.g. compounds *sindhu-kṣit, sindhu-ja, sindhu-pati* etc and derivatives like *saindhava,* and so on. It is thought to derive from the root *syand* 'flowing' or *sidh* 'reaching, having success'. In Avestan -*həndu* stands isolated, and the word for river is commonly *ϑraotah* (=S *srotas*) and *raodah*. This again is indicative of the Iranians moving away from the IAs and taking with them the memory that they had lived in a region with Seven Rivers. This was spotted even as early as Max Muller: "Zoroastrians were a colony from Northern India...[who] migrated westward to Arachosia and Persia" (1875:248)[1].

I discuss this issue very extensively with much more evidence in 'Vedic and Avestan' (Kazanas 2011).

5. There is additional evidence to support the movement Out of India.

First, archaeologists like B.&R. Allchin (1997), Cakrabarti (1999), Kennedy (1995), M. Kenoyer (1998), Lal (2009 & 1984), Gupta (1984), Schaffer (1995 & 1999) and Lichtenstein (1999), McIntosh (2002), G. Possehl (2003) and all other experts in that area, find no evidence at all of any

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[1] Müller did make several blunders, of course, in having the Aryans invade India and in assigning the *RV* c1200 – something which he repudiated later giving dates as early as 3000 and even 5000 BCE.

entry and certainly no invasion (Dales 1966! and many others thereafter) into Saptasindhu. The culture they unearthed there known as the Indus-Sarasvati (or Indus Valley or Harappan), is a native one with unbroken continuity from the seventh millennium down to 600 BCE. Then, geneticists (e.g. Sahoo et al 2006) now find that the genes spread out of India both to the northwest and southeast.

Second, there is the literary evidence of the Indic texts: –

RV 4.1.3 & 7.76.4 say that

"We and our ancestors have always been here [in Saptasindhu]" – the Aṅgiras and Vasiṣṭha families.

Also *RV* 5.10.6 says

"Our sages should pervade all regions (*víśvā āśās tarīṣáni*)" and "Aryan laws be diffused over the earth" in 10.65.11.

Thus they spread in all directions.

6.61.9,12 says that Sarasvatī has spread us all (ie. the five tribes, Anus etc) beyond the Seven sister-rivers.
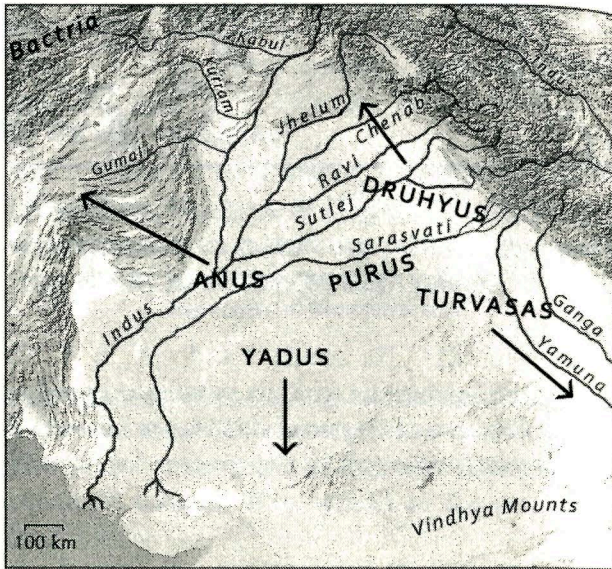
Figure 2. Map of North India showing Sarasvatī and the five Vedic tribes.

Baudhāyana's *ŚrautaSūtra* 18.14 mentions two migrations: one eastward, the Āyava; one westward, the Āmāvasa producing the Gāndhāris, Parśus (=Persians) and Arāttas (=of Urartu and/or Ararat on the Caucausus).
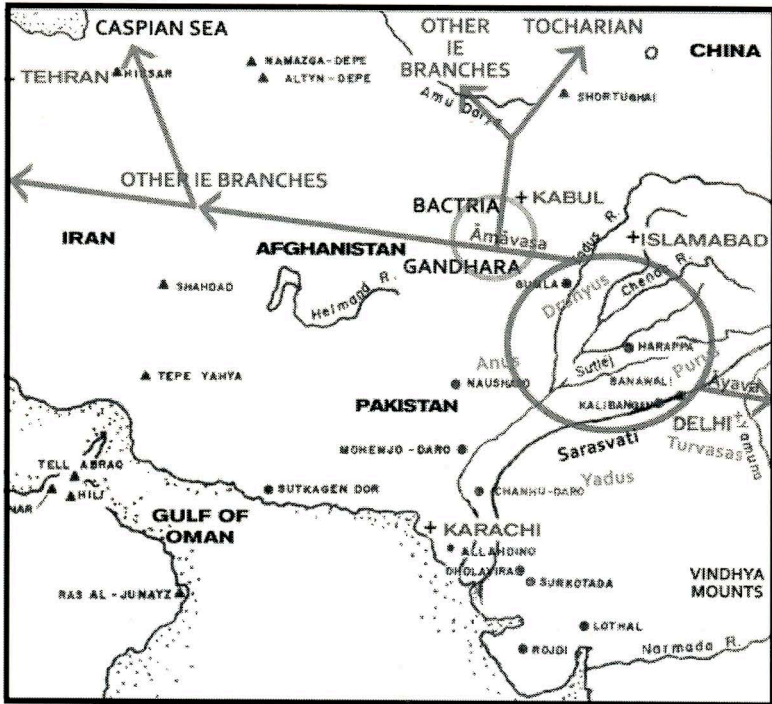
Figure 3. Map showing the "seven rivers"and Sarasvatī; various sites with Harappan artefacts far from Saptasindhu; also the two movements eastward by Āyu and westward by Amāvasu.

Back in 1997 Johanna Nichols calculated on linguistic grounds that the area of dispersal of IE branches was Bactria. As we saw this was part of the greater Saptasindhu after

the Aryan tribes, mainly Anus and Druhyus, spread Westward. Now, back to the Rigvedic all-inclusiveness.

6. Eight words of closest human relations.

1. brother : S *bhrā́tṛ,* Av *brātār-*; Toch *pracar*; Arm *elbayr*; Gk *phratēr*; It *frāter*; Celt *brathir*; Gm *broδar*; Sl *bratrъ* ; Lith *broter-*; **Not Hit.** (Note: It = Italic, mostly Latin.)

2. daughter : S *duhitṛ́*; Av *dugᵊdar-/duγδar-*; Toch *ckācar*; Arm *dustr*; G *thugátēr*; It *futir*; Gm *daúhtar*; Lith *dukte* Sl *dъšti.* **Not Hit, Celt.**

3. father : S *pitṛ́*; Av *pitar/(p)tar-*; Toch *pācar*; Arm *hair*; Gk *patēr*; It *pater*; Celt *athir* ; Gm *fadar*. **Not Baltic (=Lith or Lett), Sl, Ht.**

4. husband, lord : S *pati* ; Av *paʰtiš*; Toch *pats*; Gk *posis* ; It *potis* (=capable); Gm *–faþ(s)*; Lith *pats/patis*; Sl *–podъ.* **Not Arm, Celt, Hit (but Hit *pat* – 'just').**

5. mother : S *mātṛ́*; Av *mātār-;* Toch *mācar;* Arm *mair;* G *mētēr;* It *māter*; Celt *māthir*; Gm *mōdor*; Sl *mati.,* **Not Hit; Lith *mote* 'wife'.**

6. sister : S *svasṛ*; Av *xᵛanhar*; Toch *sar*; Arm *kʻoir* ; It *soror*; Celt *siur*; Gm *swister*; Lith *sesuo*; Sl *sestra*. **Not Hit; Gk *eór* 'daughter'.**

7. son : S *sūnú* ; Av *humuš*; Gm *sunus*; Lith *sūnus* ; Sl *synъ*, **Not Toch, Ht, Arm, G (*hui-os?*), It, Celt.**

8. wife/mistress : S *pátnī*; Av *paθnī*; G *potnia*; Lith *–patni.* **Not Toch, Arm, Hit, It, Celt, Gm, Sl.**

Only S & Av have them all. Hit has none! Yet comparativists persist in calling Hittite the most archaic IE tongue! How is it possible not to have even one of these nouns for the most common of human relations yet be the most archaic IE tongue? Why would all the others innovate

suddenly? (One Anatolian language does have a cognate for "sister". This is not of help to Hittite.)

7. Philosophy: One and Many.

For last, but certainly not least, I have left a philosophical subject. There are many more issues: cosmogony and anthropogony, reincarnation, ethics and the like. But consideration of all these issues would take much much longer. So let us look at only one more aspect. There are many cosmogonies in the *RV* but underlying them all is the idea of One from which arise the Many. Obviously there is polytheism with many gods; also henotheism, as one clan or family *gotra* worships a particular deity and ascribes to him (or her, in the case of *Aditi* or *Jñāna/Vāc*) the emergence of the creation. But there are also several references to the One from which all deities arise: so there is also monotheism or the one Absolute.

Summary.

Polytheism : many deities as in all other IE branches.

Henotheism: one clan worships a particular deity and this is said to be the best (and creator).

Monotheism: all deities, all worlds, all creatures come from One, which remains unmanifest.

Deities have divinity only by partaking of the power of the One.

mahád devā́nām asuratvám ékam 3.55: 'single and great is the high-lord-power of the gods' (in which they partake to be gods or asuras).

1.164.6: *ékam sád víprā bahudhā́ vadanti* (also 10.114.5): 'it is One but the sages call it by many expressions.'

10.90 : everything is produced from Puruṣa's parts.

10.129 *Nāsadīya: ā́nid avātám svadháyā tád ékam* : 'that One breathed without air of its own.

8.58.2 *ékam vā idáṃ víbabhuva sárvam.* 'Being One it became all'.

*3.54.8 éjad dhruvāṃ patyate ékam
víśvam, carát patatī́ víṣuṇaṃ víjātām.*

'Moving yet unmoving the One
rules the whole, what walks and
flies, all this manifest multiplicity'.

8. Obviously, when the IE speakers that emerge from the mists of pre-historic Europe and come to be known as Greeks, Germans, Celts etc, they are barbarians, fond of war, pillage and conquest. The *RV* also speaks frequently of war and battles. Here the weapon of victory is more often than not *bráhman*, the mystic power inherent in ritual and prayer, an inner force of the spirit or "silent meditation" as Puhvel calls it (1989: 153) in referring to sage Atri's rehabilitation of the sun (*RV* 5, 40,6). This is the power used by the sage Vasiṣṭha when helping King Sudas defeat his numerous enemies (*RV* 7,33) and, of course, by the Ṛbhus when accomplishing the wondrous deeds that earned them godhood. And hymn 6,75,19 says "My closest/inner armour is bráhma" (=this same mystic power). This very word *brahman* becomes, not without good reason, the name of the Absolute in post-Ṛgvedic literature, mainly the Upanishads. Yet, the Absolute is not entirely absent from the *RV*, as Keith observed: "...India developed the conception of a power common to the various gods ... just as the unity of the gods even by the time of certain Rigvedic hymns" (1925: 446).

Hymn *RV* 10,90, shows how creatures and world-elements are produced from different parts of the Puruṣa, the primordial Man: thus multiplicity comes from unity. Moreso, the *nāsadīya* hymn 10,129, describes the evolution of the whole creation including the gods from the One *ekam*. Taking cosmogonic myths from Iran, Greece, Rome and/or North Europe, some scholars rightly state that the creation arises from two primordial elements, "the action of heat on

water", and that this "reflects a multi-layered dualism that pervades Indo-European myth and religion" (Stone 1997, ch 5; see also Puhvel 1989: 277). But in the *RV Creation Hymn* 10,129, it is out of the One alone, breathing without air, of Its own power (*ánid avātâṃ svadhâyā tád ékam*), that arose all else; only in the third stanza appears *salilâm* (water?) and *tâpas* (heat?)[2] within *támas* 'darkness', within *tuchyá* 'void'; and then follows one existence, desire and so on. Here at least it is the Unity that is the basic primordial substratum. This is no different from the Absolute of the Upanishads. And this we meet in other hymns also. *RV* 8,58,2 says *ékam vā́ idâṃ ví babhuva sárvam* 'It being One has variously (*ví*) become this All (and Everything)'. Hymns 1,164,6 and 10,114,5, say that the wise poets speak of It, being One, in many ways/forms – naming it Agni, Yama, Indra, etc. Utilizing different material in the *Ṛgveda*, K Werner makes the same point (1989).

This notion of a Single One, of which all divine and mundane phenomena are manifestations, is absent from all other IE branches. Thus the Vedic Āryas, far from being bloodthirsty or primitive barbarians deifying out of fear natural phenomena like the storm or the fire, would seem to belong among the most highly cultured people on earth with a culture that consisted not so much of material artifacts as of inner spiritual power.

9. Conclusion

I have not spoken explicitly of the origins of Indian Civilization. It should be obvious, however, that I regard the rise of the Vedic Culture as indigenous and not the result of an (Aryan or proto-Indo-European) invasion or immigration.

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[2] I put question-marks because I feel certain, against the received notions, that *salilá* here does not mean 'water' but 'flux (of energy)' generally and *tâpas* 'power of transformation' – as I argue in my 2009 (pp 86-7 and note 1; or ch 2, §11). I repeat here that there is still nothing material in this third stanza within 'darkness' *támas* and 'void' *tuchyá*.

I cannot speak of the origin of this Civilization because I do not know it. And I don't think anybody else does. Of course, as is usual, there are many theories and many publications. Archaeologists and anthropologists tell us of an unbroken continuity in the remains excavated in Saptasindhu. This seems to start at the beginning of the seventh millennium BCE. But these are the grossest indications in stone, wood, mud and bricks. They certainly bespeak of a civilizations but do not tell us very much. To my mind a civilization is a condition of society and an inner state of man which promotes civility, consideration for others, honesty, justice, liberality, unity with the creation and the Creator and a general nobility as close to absolute goodness as possible. (For a discussion of different views on civilization see Kazanas & Klostermaier 2011.) These qualities of civilizations are found, I believe, in the *Ṛgveda* and are spelled out explicitly and repeatedly in the various post-rigvedic texts. Some of the motifs of the *RV* have been described adequately in this paper.

No, I do not know much about the origin of Indic civilization because, having its start in remote prehistory, it is not so evident. But one literary jewel of the Vedic Culture, the *Bhagavad Gītā*, says *ūrdhvamūlam adhaśākham* (15.1): creation has its roots high in heaven and its boughs and leaves here below. I would think the same applies to the Indic Civilization.

4. Vedic and Avestan

0. Abstract.

In this essay I examine independent linguistic evidence, often provided by iranianists like R. Beekes, and arrive at the conclusion that the *Avesta*, even its older parts (the *gāθās*), is much later than the *Ṛgveda*. Also, of course, that Vedic is more archaic than Avestan and that it was not the Indoaryans who moved away from the common Indo-Iranian habitat into the Region of the Seven Rivers, but the Iranians broke off and eventually settled and spread in ancient Iran.

Avestan alleged to be older than Vedic.

1. R. Schmitt published a paper in which he shows that Vedic (or Old Indo-Aryan) has innovations against Avestan (or Iranian) archaisms, that it is "not identical with Proto-Indo-Iranian and is not so close to PIE (=Proto-Indo-European) as many people maintain" (2009:21). He examines and contrasts analytically more than thirty pairs of cognates in the two languages and, of course, finds that the Avestan forms are more archaic than the corresponding Vedic ones, which are for the most part "of secondary character" (pp 15, 16). He does admit that often it is "quite difficult to decide whether we have to do with an inherited form, with an archaism or an innovation" and adds that the Avestan script "is more obscuring than inspiring" and so increases the difficulties (20). Nonetheless, he presents some cases where, he claims, the Vedic innovations are "irreversible" (6). On the basis of his analytical comparisons he concludes not only that Vedic

is not the most archaic of the IE branches but also that "the Indo-Aryan language and culture must have immigrated into India and do not originate there" (6-7).

I am sure we are all very grateful for Schmitt's presentation but his last conclusion does not follow from his analyses and it is certainly wrong. Even in the 19th century, despite his blunders in giving such late dates for the Vedic literature as 1200 and 800 BCE (blunders which he later repudiated assigning the *Rgveda* to 3000 and even 5000 BCE), Max Müller spotted that "the Zoroastrians [=Iranians] were a colony from Northern India ... [who] migrated westward to Arachosia and Persia" (1875: 248; brackets added). Now, Schmitt's contention is in conformity with the mainstream linguistic Doctrine, against all archaeological, anthropological, genetic, and literary evidences, but like the "invasion" of old this is utterly wrong. Many other IE (=Indo-European) branches are said to have archaisms and this is surely true; but this *ipso facto* does not on the whole make them more faithful or closer to the PIE and thus more archaic than Vedic. It is also true that Vedic displays changes, attritions and innovations even as we move from the older family Books (3, 6, 7) of the *RV* (=*Rgveda-saṃhitā*) to the later ones (8,9,10), and, of course, from the *RV* to the Upanishads. But these mutations do not detract from the general archaic character of the language and most assuredly do not prove that it came from Iran into Saptasindhu (=the land of Seven Rivers in N-W India and Pakistan) c1700-1500 BCE. Schmitt mentions no dates, sidestepping this issue, which is the one serious cause for the "Indo-Aryan controversy", as it is generally called.

2. In recent years others have also made similar claims as Schmitt and this is natural since the general AIT (=Aryan Invasion/Immigration Theory) holds that the IAs (=IndoAryans) moved away from an hypothetical, unified, original IIr (=Indo-Iranian) community somewhere in ancient Iran/Persia and entered Saptasindhu.

One such interesting claim was made by R. Beekes, a well-known comparativist (see his 1995 publication), who wrote that Avestan "is even more archaic than Sanskrit in that it preserves systematically the PIE laryngeals" (1988: xv). This is a most extraordinary assertion, since Avestan has no attested laryngeals whatever, but Beekes willfully inserts them wherever it suits his speculative "historical" approach.

R. Beekes' counter evidence!

That Beekes' assertion is highly arbitrary is shown by his own presentation of facts and comments thereon. Hereafter I shall mark **(e1)**, **(e2)** and so on, contrary evidence that shows the anteriority of Sanskrit. On page 1 (ch.1) Beekes writes: "∂rə̄ was monosyllabic." Sometimes it appears as ōrə̄: mōrə̄ndat – and this is my **(e1)**. This "it", which is monosyllabic even though it appears as ∂rə̄/ōrə̄, represents the sonorant |r̥| which disappeared entirely from Avestan but remained alive and kicking in Sanskrit. Since the exigencies of the metre in Avestan texts require that this ∂rə̄/ōrə̄ morpheme be counted as monosyllabic, surely the implication is that the poetic texts, even as they were being composed, did have the |r̥|; but due to dialectal pronunciation and other factors this changed. Moreover, since we have two alternatives (in fact there are also ar, arə, ra etc), we must suppose that the Iranian unity itself broke up into different dialects and pronunciations. Sanskrit retains a steady |r̥|: e.g. Av/S aršti-/r̥ṣṭí 'spear', varə̄ša-/vr̥kṣá 'tree, wood', ratu-/r̥tú 'point of time, season' etc.

Beekes writes that a set of words "must have had a more archaic form" and gives as archaic forms the Sanskrit! Thus in this set we find **(e2)** Av/S divamna/dyumná 'celestial light/splendour', jva/jīvá 'life' etc. Now since dyumná and jīvá are perfectly common Sanskrit lexemes, surely common sense bellows out that Sanskrit is more archaic. Even Beekes says the Vedic forms are more archaic!

Then jumping over a few pages dealing with metrical details and entering into ch 2 'The Phonetic system', we find many more examples. **(e3)** On p16 we note *uhδa-* 'word' (=S *ukthā)* and *vaxᵊδra-* < **vaχθra* 'speech' < *vaktra-* (=S *vaktrá)*! Beekes writes here that 'the development *xθ>xδ* is problematic". Of course, the problem is only in his (and other iranianists') notion that Avestan is more archaic than Sanskrit. **(e4)** Immediately following, we find *fəδrōi* which is the Ds[1] of 'father' *ptā-*. This Dative is found also as *fθrai* and *piθrē* – a fact which indicates clearly that even OAv was divided into different dialects. Now, OAv *piθrē* and YAv *piθre* = S *pitre*, Ds. On the very next page we read the phoneme |š| arose from *ṛt* as in *aməša-* 'immortal' (=S *amṛta)*; *hr* from |r| before |k| or |p| as in *vəhrka-* 'wolf' (=S *vṛka)* or *kəhrpəm-*'body' (=S *kṛp-)*.

Thus we have already five very clear counter-evidences from Beekes' own writing to his assertion that Avestan is older than Vedic. The rest of his book teems with similar cases and we shall examine some later on.

Why Beekes does not follow his own common sense displayed in the above examples and in numerous others and elects to introduce non-existent laryngeals and then use these hypothetical concoctions as actualities is beyond understanding. But then, that Avestan should be shown to be more archaic than Sanskrit seems to be an integral aspect of the mainstream linguistic Doctrine, which is the AIT, namely that the Indoaryans left the Iranians from their supposed common habitat in southeastern Iran and moved into Saptasindhu.

Methodological difficulties in Schmitt.

3. One basic difficulty here is deciding what is archaic and what is new, as Schmitt himself points out. (See also Di

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[1] Ds = Dative singular. So also with other cases: Acp=Accusative plural; Abd=Ablative dual; and so on. Also S = Sanskrit and Av = Avestan: OAv = Old Avestan, YAv = Young Avestan.

Giovine 2009 and paper in this issue). It is generally claimed that Hittite is archaic or that it has archaisms. How do we know this? Well, comes the answer, it was the first to split away from the unified PIE community. And how do we know this? Here, nobody says plainly "Well, Hittite is ostensibly the first IE language to appear in writing c1650", because this is not much of an explanation. So they say, "Well, it has archaic features like laryngeals, only two genders, a simple verbal system" and so on – which now becomes a circuitous mode of arguing, no better than the first explanation. So this matter of archaism vs innovation is (attempted to be) sorted out by reference to the speculative and unverifiable PIE "reconstructions" which are themselves based on this circularity!

This is the second problem with Schmitt's effort: the use, almost invariably, as premises and/or criteria, of the "reconstructed" PIE which is entirely conjectural and exists (in incomplete form) only in modern books. Schmitt's presentation is one of many examples where this fictional entity is treated as real fact! How a hypothesis that can in no way be verified – and in this case **we need PIE itself**, as we have Vedic, Hittite etc – is used so brazenly as fact, then premise and decisive criterion is beyond understanding. But comparativists have different values and so, without hesitancy, move year by year further away from linguistic actualities into nebulous speculations. Personally, I cannot take seriously such "reconstructions" and will not pay much attention to them.

A third difficulty is selectivity. However, unlike the second aspect, i.e. the non-attested proto-language, this aspect cannot be sidestepped. By the very nature of the exercise one has to be selective. I too shall be selective in gathering and presenting cases which prove that Vedic is more archaic than Avestan and is indigenous to N-W India. But selectivity is of two kinds: one type of selectively chooses some representative samples from a large array; the

other – disingenuous – chooses only what suits a particular line of thought and ignores all contrary evidences. I'll show that Schmitt does indulge in the second kind as well.

What then? Will the issue be decided democratically by counting which side has more and apparently irreversible cases? It is one way but, naturally, not conclusive since cases vary in significance and weight. We must look for other types of evidence that have neither unverifiable speculations nor doubtful subjective judgements. Are there such criteria?

Well, yes, there are types of evidence that are not ambivalent, hypothetical and objectionable. And here follows the first sample.

Independent counter-evidence.

4. (e5) Sanskrit has a periphrastic perfect[2]. So does Hittite where it is formed with the finite forms of the verb 'to have' ḫar-, ḫar-ak as auxiliary and the nom/acc sing neuter participle of the verb: e.g. mar-kán ḫar-teni 'you have cut': this is the only perfect Hittite has. Avestan too has the periphrastic perfect. No other IE branch has this – except as a very late innovation in historical times (Drinka 2001).

In Vedic this perfect is formed with the accusative of a feminine noun made from the verbal stem and with the perfect of kr̥- 'to do' (cakāra/cakre) as auxiliary: this is found first in the Atharva Veda (18.2.27: gamayām cakāra), continues with frequency in the Brāhmaṇas, then gives precedence to a new construction with the perfect of as- 'to be' as auxiliary as in mantrayām āsa, and then, in addition, with the perfect of bhu- 'to become, be'. Avestan has a similar construction with the acc sing of the feminine

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[2] T. Burrow (1973) and some other sanskritists ignore this, but not MacDonell (1916/1927), Whitney (1888/1962) and others.

participle of the main verb and the perfect of *ah-* 'to be' (=S *as-*) as auxiliary: e.g. *āstara yeintīm ah-* 'must have corrupted'.

Now, if Indo-Aryan had indeed moved away from the unified Indo-Iranian community in Iran, then how does it have the auxiliary *kṛ-* first and for a long period, and only afterwards the auxiliary *as-*, which is *ah-* in Avestan? In other words, if Old Indic had separated from Indo-Iranian it should have had the equivalent of the *ah-* construction, that is *as-*, and only later that of *kṛ-*. **We must conclude, on the contrary, that Avestan moved away from the Indo-Iranian unity, and it did this when the use of *as*-as auxiliary in the periphrastic perfect was well-established in the Brāhmaṇa texts.**

Of course mainstream thinking will soon come up with some explanation, such as – that the two constructions developed independently and that in any case, the periphrastic (e.g. *vidāṃ kṛ-*) is not so commonly used as the reduplicated (S *dadarśa*, Av *dadarǝsa*) or the simple perfect (S *veda*, Av *vaēδa*), and so on. Well, yes, perhaps. But we are used to these tactics and know they are hollow. Why would either Vedic or Avestan develop a third type of perfect?[3]... Hittite had no other means of expressing the perfective aspect with its implicit present meaning. But when you already have two types to do this, why would you invent a third long-winded and more complicated one?

There is no reason, other than that it was inherited and, in prehistoric times, when it was conceived, signified a nuance we cannot fully fathom. The fact that this construction is not in the *RV* does not mean it was not in existence. We do know now that several elements of Proto-Indo-Aryan did not make it into the *RV* but appeared in much later texts (see Schmitt 2009:21; Fortson 2004:196; Jamison 2004a, 2004b).

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[3] B. Drinka does not deal at all with this issue in her examination of the perfect in her two papers of 2003 and 2001.

Surely it cannot be coincidence that both languages have the accusative case singular of a feminine.

Let us now take a second example of independent evidence.

Earlier, in § 1, I used the term Saptasindhu as the name of the ancient region of the Seven Rivers in N-W India and Pakistan - countries which did not exist at that period. I use it as a bahuvrīhi, as many others have done before me, although in the *RV* we find references only to the Seven Rivers *saptá síndhavaḥ* (and different oblique cases of the plural). Now **(e6)** Avestan has the name *Haptahəndu* as a place, like *A'ryana Vaējah, Raŋhā, Haetumant,* etc, from which the Iranians had passed before settling down in eastern Iran, then spreading west and north. But what is this name? Yes, *hapta-* is the numeral 'seven' but what of *həndhu?* It is a fairly obvious Avestan correspondence to the Sanskrit *síndhu*

Now *həndu* is an isolated occurrence. The stem does not otherwise exist in Avestan. *Hi"du* appears in Old Persian indicating the Indian province under the Achaemenids, and that is all. The interpretation 'seven rivers' comes from the Sanskrit collocation. But the Avestan for river is usually *θraotah-* (=S *srotas*) and *raodah-.*

In Sanskrit *síndhu* 'river, sea' comes either from √*syand* 'flowing' or from √*sidh* 'reaching, succeeding', both of which generate several derivatives, while *síndhu* itself appears in compounds like *sindhuja, sindhupati* 'riverborn, riverlord' etc, and has cognates like *saindhava* 'marine, salt, horse' etc.

Surely nobody would be so foolhardy as to suggest that the IAs took this otherwise unattested stem from Iranian and used it so commonly and productively. Schmitt certainly makes no such suggestion. But how are we to resolve this situation?

Clearly, the Avestan and Vedic names are connected. Since the Vedic name cannot reasonably be said to come

from the Avestan, then the Avestan must come from the Vedic. Moreover, the Vedic collocation *saptá síndhu-* does not occur at all in the very early Books of the *RV* (i.e. 3, 6, 7) but once only in Bk2 (12.3,12) and Bk4 (28.1), then twice in Bk1 (32.12; 35.8), Bk8 (54.4; 69.12) and Bk10 (43.3; 67.12) and once in Bk9 (66.6). Now in the earliest Maṇḍalas 3,6,7 (as well as later ones) we find collocations like *saptá srótas-, srávat-, yahvī-* or *nadī-* but not *síndhu-*. This then suggests that the Iranians left the Saptasindhu only after the collocation *saptá síndhu-* had been established by the late Maṇḍalas. The chronology of the Maṇḍalas will be discussed in the next section.

Please note (a) that the two cases I have mentioned do not involve the doubt-ridden contrast of archaism and innovation nor hypothetical Proto-languages and (b) that I have not referred at all to the equation of original *s in the unknown PIE with S /s/ and Av /h/.

Further down we shall examine several more similar cases which do not require conjectural reconstructions but only a little reasoning and courage to face facts. Before proceeding with such cases I would like to clarify the division between the early Books of the *RV* and the late ones.

Chronological sequence of the *RV* maṇḍalas.

5. There is common agreement among all vedists that the Family Maṇḍalas 2-7, are earlier than the others (1,8-10). Some from the 19th century to the late 20th (e.g. Oldenberg 1888, Hopkins 1896, Witzel 1995b, 1997) have delved deeper and made even finer distinctions.

Some years ago, S. Talageri examined the relevant evidence in order to date more accurately the 10 Maṇḍalas (Talageri 2000). Utilizing earlier studies from Oldenberg to Witzel, who used mainly linguistic criteria, but examining also the names in the Anukramanis of the ṛṣis who composed

the hymns and the incidence of names of kings or heroes playing an important role in the events of the era (e.g. Sudās, son of Divodāsa), he arrived at the following sequence:

6,3,7,4,2,5,1,8,9,10

Earliest – 6,3,7;

Middle – 4,2 (and few hymns of Bk1);

Medial – 5 (and few hymns of Bk1);

Late – most of Bk1, 8,9;

Latest – 10.

Frankly, none of these criteria can secure an indubitable, utterly reliable chronology. Linguistic criteria are useful, of course; but a writer can easily imitate an archaic style: I am thinking of the orphic Hymns in Greece which were composed in the first two centuries of the Common Era but their language is extremely archaic. E.W. Hopkins gave examples in the *RV* Books themselves (1896). Then, a poet of a later era may well decide to give prominence to a figure of a much earlier period ignoring figures closer to his own era. As for the names of the poets themselves, here too there are difficulties and uncertainties: for example, hymn 10.186 is addressed to Vāta, the Windgod, by one named Vātāyana (= *Vāta-āyana* 'descendant of Vāta') while 10.158 is addressed to Sūrya the Sungod, by one Cakṣus Sūrya, and stanza four prays for "sight in our eye" (*cákṣus*); then, 10.14 is by one Yama referring to god Yama and the hounds of heaven; 9.107 is by the Seven Sages, 8.27-8 are by Manu Vaivasvata, which fact assigns them to very ancient prehistory; and so on! True names like Bharadvāja or Viśvāmitra are not of such nature, nonetheless the doubt has entered regarding the reliability of the names of the ṛsis. as valid evidence. More reliable evidence comes from *Aitareya Brāhmaṇa* which states (6.18) that six hymns in *RV* Book 3 (30, 31, 34, 36, 38, 48) were inserted into this book at a late date.

However, all in all I accept Talageri's scheme but not his view that it took about 2000 years to complete the RV[4]. Although there are some serious linguistic differences between the early and late hymns, two millennia constitute a very long period and one would expect many more changes in the language – more or less like those observable in the poetic Upanishads. Be that as it may, the RV was complete by c3300 BCE[5] except for the interpolations.

Moreover, for my purposes, I shall make the following simple division:

Early books 3,6 and 7;

Middle 2,4;

Late: 5, 1, 8, 9 and 10;

Probably Talageri on his part, Witzel on his own part and others with different preferences, will disagree. So be it.

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[4] As usual Oldenberg, Arnold, Hopkins and others do not agree fully, and Witzel in later studies prevaricates with increased intensity contradicting his own statements before 2000 regarding late and early hymns. We can safely ignore Witzel's contradictory remarks. The ineluctable facts are that the early Books 3,6,7 mention not one rishi or his descendants who composed later hymns (Bks 1,2,4,5,8-10). In sharp contrast, hymns in Book 4 are composed by Ajamīlha Sauhotra in common with Purumīlha Sauhotra who are obviously descendants of Suhotra Bhāradvāja, composer of 6.31-32. Furthermore, in the early Books we meet kings Divodāsa and Sudās as more or less contemporaneous (with king Bharata, an ancient figure) whereas in the later books Divodāsa and Sudās are ancestral figures while their descendants are contemporaneous – e.g. Sahadeva and Somaka.

Unfortunately we have no other, more secure data to rely upon. And, what is more, this conclusion does not violate Oldenberg's criteria or the views of older vedists.

However, see N. Achar's paper herein where a new approach is given. Unfortunately, this paper came to my notice much too late and so I was unable to give it full consideration.

[5] The RV knows nothing of writing, baked-brick building, cotton, iconography, urbanization, ruins and several other features of the mature Indus-Sarasvati culture which began to manifest at about 3000, yet are known in post rigvedic texts, AtharvaVeda, YajurVeda etc. (See Kazanas 2009b.)

I trust that no one will disagree that Bks 2, 3, 4, 6, 7 are earlier, that the *RV* is earlier than the remaining Vedic corpus and that the entire Vedic corpus from the *RV* to and including the ten-twelve early Upanishads, is earlier than the Sūtra and Epic and subsequent literature.

6. This division is important because it has an independent, decisive bearing on the relation between Vedic and Avestan. (The evidence is so abundant that I shall not refer to disputed and doubtful hymns.) And here we meet a curious but not unsurmountable difficulty. Some scholars find such differences between the two tongues that they believe the two developed independently from two distinct dialects of PIE (e.g. Meillet 1967 and, of course, several Italians like Bonfante 1931 and Pisani 1971, who postulate dialects and not a PIE unitary language). Others insist that Vedic and Avestan are so (misleadingly) similar that they come from a common dialect, Proto-Indo-Iranian, and stand in the relation of sisters (Fortson 2004:180; et al); and it is well known that "whole sentences ... may be transposed from one language to the other" (Sims-Williams 2006: 126).

However, Meillet is not entirely wrong since Avestan, in common with all the other branches, lost the original voiced aspirates (e.g. *dh as in S **db**āman 'domain' vs Av **d**āman); also the original *ṛ (e.g. as in S **bbṛti** 'maintenance' vs Av bᵊrᵊti-). Then, in Avestan (as in Armenian, Phrygian and Greek) original *s in pre- or inter-vocalic position became *b*: e.g. S **s**oma vs Av **b**aoma, S **as**ura vs Av **ab**ura-. This immediately suggests that Avestan broke away from Old Indic. In any event, surely it is most odd since Indo-Iranian is supposed to have separated, albeit late, from the other branches, and even from Armenian and Greek (which are thought by many to be so close to IIr as to form a small sub-group) and moved, always according to the AIT of the IE linguistic Doctrine, south-east into Persia whence IAn later

broke away into Saptasindhu. Of course, this isogloss *s>h could have developed independently (as perhaps the loss of the voiced aspirates and the retroflex ṛ). But it is a bit of a mystery that IA did not suffer these losses and mutations despite its additional trek (in contrast to Tocharian which made a correspondingly long journey and, indeed, suffered many such changes).

Here, we must note that many scholars observed that it is the late Books of the *RV* and particularly Bk8 that are closely linked with the Avesta and its language. In fact Hopkins stressed this view in no uncertain terms:

Book 8, he wrote, **with the General Books** [i.e. 1, 9, 10] **and post-Rik literature agrees with Avestan as against the early family books** (1896:73, my bracket). And adds: **We must, I think, suppose that the Avesta and RV. viii are younger than RV. ii-vii; or else that the poets of viii were geographically nearer to the Avestan people and so took from them certain words** (ibid, 81).

Yes, it is always possible that the Vedics borrowed from the Iranians but this view assumes the IIr unified advance southward and the AIT as premises which had been established by the 1880's. We saw that all scholars agree on the antiquity of *RV* ii-vii vs the lateness of viii-x. We saw two examples (and will see many more) which indicate rather decisively that Iranian moved out of the larger Saptasindhu. But, be that as it may for now, what actually concerns us is the relation of the different Books of the *RV* to the Avesta. And here Hopkins states that the late Maṇḍalas agree with the Iranian text. Why?

Many other scholars after Hopkins noted the synchrony between the *Avesta* and the later Vedic literature. Thus J. Tavadia, expert in Indo-Iranian studies, wrote: "It is the eighth Maṇḍala [of the *RV*] which bears the most striking similarity to the Avesta. There ... (and of course partly in the related first Maṇḍala) do some common words like *uṣṭra* and

the strophic structure called pragātha occur" (1950; my square brackets). We shall examine further down the common lexemes and the strophic structures in the two traditions.

Iranianist H. Humbach, too, emphasises the same similarity pointing out **(e7)** the polarisation of relations between the Ahuras and the Daevas in the Gathic Avesta and the reverse polarisation between Devas and Asuras which only begins to occur in the later books of the *RV*; he concludes: "All this suggests a synchrony between the later Vedic period and Zarathustra's reform in Iran" (1991:23). It is a very clear statement, allocating the *Avesta* towards the later Vedic period.

Hopkins not only had a general feeling about this synchrony but also noted the common vocabulary in the *Avesta* and the later Maṇḍalas. Some of these stems like *udarō-/udarā* 'belly' or *zāmātar-/jámatar* 'son-in-law' have IE cognates (Mayrhofer, *KEWA/EWA*) and cannot therefore be regarded as items for comparison. Two other words *maēša-/meṣá* 'ram, sheep' and *mīz-/bīza* 'seed' have cognates but only in the Balto-Slavic families (Lith *maisas*/Sl *měch*Ƃ 'large sack' and Lith *miežus* 'grain' respectively): these could be considered developments or loans within the *satəm* group (Vedic/Avestan/Slavic/Baltic) and should not be used in comparison tests. Both words occur in the late Maṇḍalas and thus corroborate the close relation with the *Avesta*. But I leave them out. There are many more lexemes for this purpose.

Key non-IE words are, otherwise, S *úṣṭra* 'camel', *kṣīra* 'milk', *gáthă* 'song' and several more, soon to be examined.

M. Witzel (2001, 2005) and A. Lubotsky (2001) think that these and some more, like *kaśyápa/kasiiapa-* 'tortoise' and *bhangá/banha-* 'hemp', were borrowed by the common IIr on its way south from an unknown BMAC language (Bactria-Margiana Archaeological Complex). But surely the IAs did not live in a vacuum and, as they expanded north and west of

the region of the Seven Rivers (*RV* 6.61.9, 12), they
obviously came into contact – if this did not happen earlier
through trade – with other nations and languages. That they
should then borrow some vocabulary (e.g. *úṣṭra* 'camel',
kaśyápa 'tortoise', *bhaṅgá* 'hemp' etc) is not unnatural and
they most certainly did not need to have travelled from the
Pontic Steppe to have picked up these and similar loan
words.

Lexemes in late-Vedic and post-Vedic texts.

7. The point about the preceding discussion is that all
these non-IE words are found in the *RV* and the *Avesta* and
most occur only in the late Maṇḍalas, i.e. 1, 5, 8, 9, 10 – not in
the middle and early ones, i.e. 2, 4 and 3, 6, 7. There are
some exceptions and Hopkins argued that these are either in
late hymns or late intrusions in the early hymns as happens
with some verses. This fact would indicate that Avestan
moved away from wider Saptasindhu, or that the early
Avestan parts, i.e. the *gāθās* were being produced at the
same time as, or shortly after, these late rigvedic hymns were
composed. It is difficult to see why these words were used
only in the late but not the five earlier *RV* books. True,
absence of evidence is no sure evidence of absence. But this
would apply for one, two, five items not 50 or more. One
would not expect words like *áśā* 'space', *kṣīrá* 'milk', or *strī*
'woman' to be used immediately since the language had
synonyms; but one would expect *íṣṭakā* 'brick' (YajurVeda),
gandhá 'smell' (1.162.10b only), *śánais* 'softly, slowly'
(thrice in Bk8), or *sūcī* 'needle' (*śūka* in EWA, III491, 363).

Below I present a list of 100 such words from Hopkins,
Lubotsky and Witzel leaving out doubtful and well-attested
IE cases like *udára/udaró/húderos* etc. I obtained several
more myself from Dictionaries (e.g. *takmán* 'fever' in *AV*,
pravaha 'current' in *ŚB* etc: EWA) and several collocations of
near exact correspondence. I do not distinguish between
Gathic and Late Avestan because the material from the

former would be negligible and, in any case, the different forms of the words do not affect the issue; a word appearing in Younger Avestan was most probably available in the older language but probably not in the same form and not used. On the other hand words appearing in O Persian and subsequent dialects have been left out. The words are arranged in the Sanskrit alphabetical order: first is the Sanskrit form, then its meaning, then in brackets the Avestan form and finally the Indic source: numerical indications refer to the *RV* as also early (Bks 3, 6, 7), middle (2, 4) and late (1, 5, 8-10), or initials of sources; words with a cross before are post-rigvedic and thought by Lubotsky (2001) and Witzel (2005, etc) to be loans (from the BMAC or whatever); the letter 'c' indicates collocation, the cross at the end indicates continued use in later texts.

+ *áka* 'pain' (*aka-*): TS+

angustha 'finger, thumb' (*angušto̧*): ŚBr +.

apamá 'most distant' (*apə̧mō̧*): 10.39.3, +.

avasāná 'stop, rest' (*avahāna-*): 10.14.9, +.

ámavattara 'more impetuous' (*ə̧mavastara-*): 10.76.5, +.

arhána- 'claiming, deserving' (*arə̧ǰan-*): 1.87.1; Su +.

ávitti 'non-obtaining' (*ə̧visti*): AV +.

ávithura 'non lurching' (*ᵃviθūra-*): 1.87.1: Su +.

aśvasthāna 'horse-stable' (*aspō̧. stānō̧*): Su +.

ā́krti 'form, existence' (*ākə̧rə̧ti* 'formation'): 10.85.5, +.

ā́manas 'of friendly mind' (*ā.manaŋha-*): AV +.

ā́śā 'space' (*asah-*): 4.37.7; 6 in late.

+ *íṣṭākā* '(baked) brick' (*ištiia-*): VS +.

(sam-)ī́ha- 'striving for' *īhate* 'endeavours' (*iziia-, iziie'ti*): VS +.

úṣṭra 'camel' (*uštra-*): 1.138.2: 4 in 8.

c *ṛtásya...dhāma* 'abode of ṛta' (*aša...dāmạm*): 4.7.7; 2 in 1 & 1 in 10.

eváthā 'so, exactly' (*aēuuaθα*): 8.24.15.

ojodáttama 'most strength-giving' (*aogozdastə̧ma-*): 8.92.17.

ójasvant 'powerful' (*aoǰahvant-*): 8.76.5.

odaná 'brew (doubtfully of rice)' (*aoδa-*): 8.58.14; twice in 8.66. See also *ódatī* 'shimmering', epithet for Uṣas in 1 and 8 and *ódman* 'flood, wetness' in VS +. Definitely late formations.

c *aîcchat..avindat* 'one wanted [and] found' (*isǝmnō...vindáíte*): Maitrāyaṇī S: collocation (under vinda- in EWA).

+ *kádru* 'reddish-brown' (*kadruua-aspa* 'reddish-brown horse' name of mountain): TS + *.kádru* 'wooden vessel' in 8.45.26; *tríkadruka-* in 2, 1, 8, 10. Only the colour is common to the two cultures (late in Sanskrit).

+ *kapha* 'mucus, phlegm' (*kafa-*): Up, Suśruta, +.

+ *kaśyápa* 'tortoise, pr.n' (*kasiiapa-*): *AV* +; name of ṛṣi for 1.99 & in 9.114.2.

kéśa 'hair' (*gaeśa*): post-rigvedic, but *kéśavant* 10.105.5 (& *kéśin* 3.6.6, 3.41.9; otherwise 17 late: 6 in 1, 3 in 8, 8 in 10).

c *krátvā mānasā* 'with strong mind' (*xrateuš mananhasčā*): 4.33.9.

c *krátvā sacate* 'accompanies, unites with strength' (*hacaite...xratuš*): 1.145.2.

c *vardhayanti .. kṣatrám* 'they increase rulership' (*hšaprǝm...varǝdaíti*): 1.54.8.

c *kṣiprāśva-* 'swift-horse' (*xšuuiβraspa-* pr.n): Jaiminīya Br.

+ *khára* 'donkey' (*harō/xara-*) *AV* Ppl +.

gadā 'club' (*gaδā*): Up, Su +.

gandhá 'smel' (*gaiṇti-*): 1.162.10 only; +

gandharvá 'heavenly being' (*gandarǝwō*): 3.38.6 (late hymn); 21 late- 2 in 1, 2 in 8, 4 in 9, 11 in 10; +.

gáthā 'song' (*gāθā*): 5.44.5; then 1, 8-10.

+ *gṛdá* 'penis' (*gereδ-a/o-*): TS +.

+ *cāt-vala* 'pit, dughole' (*cāt-* 'well'): Kāṭhaka Saṃhitā.

+ *jáhakā* 'hedgehod' (*dužaka-*): VS +.

takmán 'fever' (*tafnah-*): *AV* +.

tanū-kṛt/kṛtha 'attenuating' (*tanukǝrǝta-*): 1.31.9; 2 in 8.

c *sváyā tanvā* 'by one-self' (*hunam tanūm*): *AV.*

támasvant 'having gloom' (*t∂mahvant*): *AV*.

tiṣyá/tiṣiya- 'archer, lunar mansion' (*tištriia*): 5.54.13; 10.64.8.

tókman 'sprout, fresh blade' (*taoxman*): 10.62.8, +.

tritá āptyá a deity (*θrita aθβiia*): 1.105.9; 2 in 8, 1 in 10.

traítanā a deity (*þraētaona*) 1.158.5.

c *na...trātā vidyate* 'no protector is seen' (*nāþrātā ristō*): Epic.

c *ásum...dadātu* 'let one give life' (*ahūm dadāt*) 10.59.7.

dīrghabāhu 'longarnaed' (*dar∂gō.bāzu*): Epic.

dīrghayajña 'long sacrifice' (*dar∂γ-yasn-*): Epic.

dīrgháyu 'long-life' (*dar∂gāciu*): 1.96.8; 8.70.7; +.

c *devā́nāṃ devátama-* 'most godly of gods' (*daēuuanąm daēuuo. t∂mo*): 2.24.3.

devayáj-/devayajñá 'god sacrifice' (*daēuua-iiaz/iiasna*): VS + (EWA).

durā́pa 'hard to attain' (*duz.āpiia*): Ś Br +.

dū́riṣṭi 'bad offering, defect in sacrifice' (*duž.iiasti*) *AV* +.

duruktá 'bad, harsh speech' (*duž.uxta-*): Br +.

dur-dhā́- 'plant confusion' (*duž.dā-*) 1.40.11; 10.109.4; +.

durmanas 'bad disposition' (*dužmanah*): Epic +.

durmánman 'evil-minded' (*duš.mainiiu-*): 8.49.7.

durvacas 'abuse/abusive' (*duž.vačah*): Epic.

+ *niks-*, *nékṣaṇa* 'piercing instrument' (*naēza-*): *AV* +.

parikara 'preparing' etc (*pa^i^rikara-*): Epic.

parikarṣa 'dragging round' (*pa^i^ri.karša-*): Epic.

parivāra 'covering; retinue' (*pa^i^ri.vāre-*): Epic.

púccha "tail' (*pusa-*): *AV* +.

putrada- 'child giver' (*puþrō.da-*): post-vedic.

putravant 'having child(ren)' (*puþra.vant*): VS +.

puro-gā́m- 'going first' (*frō.gā-*): 1.118.11; 3 in 10; Epic +.

prátipraśna 'counterquestion' (*pa^i^ti.p∂r^∂^sn-, frasa-*): *AV* +.

prábhartṛ 'procurer' (*frabar∂tar-*): 1.178.3; 8.2.35.

pramánas 'careful' (*framanah-*): *AV* +.

pravā-c/k- 'declare/declaration' (*fra.vā́č/k-*): Br +.

pravāra 'covering' (*fravāra-*): Br Up +.

pratisthāna 'establishment, fixed stand' (*pa͟ti.štāna*): Br +.

prativacana 'answer' (*pa͟ti.vača-*): Epic.

pratīpa 'adverse' (*pa͟tipa-*): Epic.

prå̄rtha 'eager; equipment' (*fra͟bya-*) AV +.

buddhi 'discrimination, reason' (-*busti-*): Su +.

bhaṅgá 'hemp' (*baŋha-*): AV +.

marká 'death' (*mahrka-*): 10.27.20; +.

c *devā́ utá mártyāso* 'gods and mortals' (*daēvāišča mašyāišča*): 8.48.1. Here, of course, the Avestan is 'devils and mortals', since the meaning of *daēva* changed from *deva* 'deity'.

manasyá- 'have in mind' (*manahya*): Br +.

c *manā́ hiraṇyáyā* 'with a golden ornament' (*zarᵊmu-...ma͟ni*): 8.78.2.

malhā 'belly, udder' (*mᵊrᵊzana-*): TS +.

mithyāvāc- 'false speech' (*miθah.vac-*): Ś Br +.

mūja- (vat-) name of a people (*muža-*): AV +. (Also, name of a mountain).

varāhá 'wild bear' (*varāza-*): in 1, 8-10.

vā́rtraghna 'victorious' (*vērᵊþrazna-*): VS, TS. (From *vṛtrahán-* 'slayer of demon Vṛtra' epithet of Indra.

valka 'bark' (*varᵊka-*): TS +. (Appears in Bulgarian & Russian only: late loan?)

vā́šī 'axe, cutter' (*vāsī-*): 3 in 1, then 2 in 5, 8,10.

c *vástrā...vásāna* 'wearing clothes' (*vastrā°...vaŋhatu*); 9.97.2.

vijīvitā 'dead, lifeless' (*vījua-*): Ep

vitasti 'span' (length) (*vītasti-*): Ś Br +.

vídeva 'godless' (*vīdaēva*): AV +.

vidyā́ 'knowledge' (*vaēdya-*): 10.71.11; +.

vídveṣa 'enmity, hate' (*vidvaiša-*): 8.1.2; 22.2; +.

c *(ichán...) avi(n)dat* 'desiring..(s)he found' (*isᵊmnō...vindā͟te*): 10.46.2; 67.4.

viśvatanu 'having all forms' (*vīspō.tanū-*): Pur (EWA under *viśva-*).

visvapati 'all-lord' (*vīspō.pa͟tiš-*): Epic +.

víśvavāsu 'all-riches' (*vīspā.vohū*): 10.85.2; and 2 more in 10.

viśvavidvaṃs- 'having known all' (*vīspō.vīduah-*): post vedic
c *viśve amṛātās(as)* 'all immortals' (*vīspasča aməš aⁱ-*):
1.59.1; 4.1.10; 42.1

vṛkká 'kidney' (*vərəδka*): 1.187.10; *AV* +.

vṛtratára 'more than Vṛtra' (*vərəᵗþramtar-*): 1.32.5.

vṛṣṇī 'male, vigorous' (*varšni-*) 1.102.2; 8.6.6; TS.

védiṣṭha 'most-procuring' (*vaēdišta-*): 8.2.24.

véśman 'abode' (*vaēsmən-*) 1.46.3; 10.107.4; +.

+ *śarva* a demon (*saurva-*): *AV.*

śūka 'sting' (*sūkā* 'awn of grain'): Epic +.

  [*sūcí(-ka)* 'needle' (*sūčan*): 2.32.4; 1.191.7: Variant of
  the above]

śépa 'tail' (*xšuuaēpa-*): 5.2.7; 1 in 9; 2 in 10.

sucitrá 'varied, beautiful' (*hučiþra-*): *AV.*

sudhāman 'moon (good abode)' (*huδāman-*): Pur.

sumāyá 'noble counsel' pr.n. (*humāya*): 1.88.1; 167.2; +.

*susambhṛ́*t 'well-bringing-together' (*huš.hambərᵊt-*): TS

suṣakhā́ 'good friend' (*huš.haḫā-*): 1.173.9; 1 in 8; 2 in 10.

suṣāna 'easily obtained' (*hu. šᵊna-*): 1.42.6.

suṣṭhú 'rightly' (*huštu*): 8.22.18 +.

c *soma* ... *vṛtraha* 'O Soma, vṛtra-slayer' (*haomō.. vərᵊþrajā*):
9.89.7; 2 more in 9.

c *bhesajānām...sómaḥ* 'soma ... of cure(r)s'
(*haomō...baēšazyō*): *AV.*

c *(máde) sómasya* 'in the exhilaration of soma' (*haomahe
maδō*: 2.17.1; 4.26.5; and 5 late

rúhat sómo na párvatasya pṛṣṭé 'may soma ascend as if up a
mountain-slope' (*paᵘrvatāhva... viraoδahe haomō*):
5.36.2.

c *sóma-...sukrátuḥ* 'soma all-/powerful/wise'
(*haomō...huḫsatuš*): 9.12.4; 10.25.8.

sómavant 'having soma' (*haomavaṇt-*): 10.97.7; 113.8.

sthūṇā 'column, post' (*stūnā-*): 1.59.1; 2 in 5, 1 in 8, 1 in 10.

snāván 'sinew' (*snaāvarᵊ*): *AV* +

híraṇyapeśas 'gold-bedecked' (*zaranyō.paēsa-*): 8.8.2;
31.8.

8. The list has just over 120 items. Apart from simple words, there are compounds like *tanū-kŕt* and collocations like *sómaḥ...sukrátuḥ.*

Of these only *gandharvá* occurs once in the apparently early 3.86.6 against 21 occurrences in Bks 1, 8-10. This 3.86 is a late hymn inserted in Bk 3 at a much later date together with hymns 30, 31, 34, 36 and 48 according to *Aitareya Brāhmaṇa* 6.18. (Note: I don't regard even this report as fool-proof. In any case, we could leave out this word and 20 more. We would still have over **(e8)** 100 items. But, really, a reasonable mind would accept even 50.)

Of these, again, only 6 occur in the middle Bks 2 and 4.

Of the remainder, 59 (i.e. about half) occur in post-rigvedic texts and 15 in post-vedic ones. Thus **(e9)** we have more than 100 lexemes occurring only in the late Books and in post-rigvedic texts. Now, certainly, absence of evidence is not evidence of absence. However, here we have not 1, 2, 5, or 10 items but 100. The words probably did exist in the language (or dialects, to be precise) but they were not used in the early Books; 59 of them (half the total) not at all in the *RV.* This surely has great significance.

Moreover, **(e10)** 14 of these did not perhaps belong to Sanskrit, according to Lubotsky (2001), but were loans. All 14, marked with + before the word, are found in post-rigvedic texts. This signifies that the *Avesta* may be much later than the *RV.*

(e11) To these I would add the Vedic *yuṣmá-* and Av *yūšma-* (against OAv *xšma-<*ušma-?*). F Kuiper thinks Avestan borrowed *yūšma-* from Vedic (1991:40). And I take this as a separate case because Kuiper promulgates a direct borrowing.

Here again, as with the periphrastic perfect of the auxiliary *as/ah,* if the Avesta was contemporaneous with the *RV,* the 59 post-rigvedic words would not have appeared for the first time in the later texts; or, at least they would not be

quite so many. The number is far too big to ascribe it to chance or accident.

Synchrony of Proper names.

9. Another reason Hopkins connected Books 1, 8-10 with *Avesta* is the use of *priyá* as first member of compounds denoting proper names (1896:66).

(**e12**) Indeed, in the *Avesta* are found such names as *Friia, Friiana, Friiáspa.* With Lubotsky's *Concordance* .... and Mayrhofer's 1979 publication and *EWA* we find several names in the *RV* too with *priya-* as first member and some of them repeating in Bks 1, 8-10: *Príyakṣatra* (8.27.19); *Priyajāta* (8.71.1); *Priyádhāma* (1.140.1); *Priyámedha* (1.45.4; etc; 8.5.25; etc; 10.73.11); *Priyāratha* (1.122.7); *Priyāvrata* (10.150.3); *Priyasás* (9.97.3). As there are many more occurrences, the list is selective.

Mayrhofer gives in addition (*KEWA* III, 174) some compound names with *vásu/vohu-* (vaṇhu) as first member (**e13**): e.g. *Vásumanas* (poet of 10.179.3) and *Vohu.manah-*; *Vásurocis* (8.34.16) and *Vohu.raocah-* etc. In Avestan the *vaṇhu/vohu-* as prefix is very common: e.g. *Vohu.asti* (also in Mayrhofer corresponding to V *vásu-átithi-*), *Vohuštra, Vaṇhuδāta* etc. In the *RV* the corresponding stem is seen in *Vásu-śruta* (poet, 5.3.6), *Vasuyu* (poet 5.35), *Vásu* (poet, 9.80-82), *Vásukra* (9.28.30 & poet of 10.27) etc.

The word *átithi* (=Av *asti-*), on the other hand, as seen in Av *Vahuasti,* occurs in the *RV* in many compound names as second member: *Devátithi* (poet, 8.4 etc); *Nīpátithi* (8.34); *Brahmátithi* (8.5); *Medhátithi* (poet, 1.12 etc; 8.1 etc; 9.2 etc); The word *vásu* too occurs as second member (**e14**): *Prabhu-vasu* (9.35.6); *Viśvá-vasu* (poet 10.139) etc; also in Avestan *Api.vohu, Fradat.vaṇhu* etc, etc.

Yet another case of naming is the Sanskrit suffix *-āyana* denoting 'descendant of' and usually demanding *vṛddhi* in the stem (**e15**). MacDonell gives (1916: 261) as example the

patronymic *Kāṇvāyana* (*RV* 8.55.4). Avestan has several names with this suffix - *Dānaiiana, Friiana, Jištaiiana* etc (in Mayrhofer 1979). In the late Books of the *RV* and in later texts we find several names in this category: *Gaupāyana, Nārāyana, Yāmāyana, Vātāyana* (*RV* 1.24; 160 etc; 10.56; 90 etc; *Tāṇḍya Br*) etc.

All these names, compounds and patronymics, as Hopkins observed long ago, occur only in the late Maṇḍalas. Obviously then, if the IAs had left the ancient unitary IIr community, as is commonly promulgated by the mainstream Doctrine (and Schmitt), they would have carried with them such names and used them in the early Maṇḍalas as well. Therefore these names also, like so much else, constitute irrefutable evidence against the Doctrine, independent of conjectural reproductions and ambivalent data. The names are far too many and their incidence very frequent to invoke here coincidence or the convenient maxim "absence of evidence is no evidence of absence". So, we must conclude that the Iranians distanced themselves from the IAs after it became fashionable to use *priyá* and *vásu* either as first or second members in compounds of proper names; this implies estrangement at the very earliest during the composition of hymns in Maṇḍala 8.

Some of Schmitt's 'irreversible' cases.

10. Before presenting more cases, let us examine some few examples from those given by Schmitt and see if we can discover different interpretations. But I say at the outset that indeed some Avestan forms may be more archaic but this fact alone does not make the Avestan language as a whole more archaic than Vedic.

First, I agree fully with some of his examples in that they show an archaism lost in Sanskrit. For instance, *huuarᵊ* 'sun' has Gs (=Gen Sing)[6] *hᵛə̄ṇg* (p19) showing its heteroclitic

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[6] Hereafter the cases are in capital and the numbers in small letters: Ac = Accusative; Ab = Ablative; etc; s = singular; etc. (see also n 1.)

class; Sanskrit has *svàr*, Gs *súras* (cf *áhar* Gs *áhnas*) but, unusually Ls *svar* (unlike *púr>pur-í*) like stems in *-an* (as with *áśman>áśman-(i)* or *kárman(-i)* etc). Having written all this, I should point out that *-ng* (=ŋ often: so Beekes 1988:19) crops up frequently where it should not normally be, as in Ls *vaŋhāu* of *vahu/vohu* 'good' (=S *vāsu*). So *bʰāŋg* could be another red herring.

The first example has to do with laryngeals which in fact do not exist in Vedic or Avestan. So we bypass it. In any case, we meet them in the next example. The second example also touches on laryngeals (the *h_2 one) and is concerned with the "irregular paradigm", as Schmitt calls it, of 'father'. He deals with various speculations about Proto-IIr, admits uncertainty but thinks "more genuine" the "irregular Avestan paradigm" with its many variant stems (OAv/Yav Ns *tā/ptā*; Acs *pᵃtarə̃m/ptar/pitarə̃m*; Ds *fðrōi, fθrai, piθre/piθre*; Np Yav only, *pᵃtarō*; Dp *ptərᵊbiio*). He points out that several good manuscripts favour the stem *pt-* for Acs and Np, which is found also in YAv in Ns *ptā* and Dp *ptarᵊbiiō* (Schmitt, 12-13). In fact, in the end, we don't know what the PIIr stem was. (See also Hale 2004:748; Kazanas 2009b:19-20).

However, two aspects are not mentioned by Schmitt.

a) The *h_2 performance in Vedic as conceived by comparativists. First, we should note that Latin too has the monotonous *pit-* stem (not only *pat-* as the Gk *pat-*) in Ju[s]-**pit**ar and Mars- **pit**ar; so it is strange that Vedic, with its strong tendency to level vowels down to *a/ā*, has, as Schmitt says p.20) "repeated *pit-*". Second, the laryngeal h_2 is supposed to give a vowel but also aspiration to the preceding morpheme: thus alleged IE *$dhugh_2tr$ (Fortson 2004: 204) gives Gm *thugatēr* and V *duhitṛ while alleged IE *sth_2to > S *sthitá* and *$pleth_2$ > S *prathimán*. However, alleged PIE *ph_2ter > S *pitṛ* without aspiration! What happened to the IE phonological "law"? Why is it not working here?... No explanation is given. But perhaps things are not quite as IE linguistics imagines them to be?

In any event, it is best to deal with actualities rather than conjectural reconstructions. Schmitt's discussion is based on imaginary constructs not realities.

b) (**e16**) The termination -*tar*. In Sanskrit the word is not *pitār* but *pitṛ́* (like *duhitṛ́, bhrā́tṛ, dā́tṛ, nétṛ* etc). Schmitt does not give the Acp which, by analogy with *dātāro*, would end in -*tārō* (*or* -*tărō* as is its attested Np *pə̆. tărō*). Vedic has *pi-tṝn*. If the ṝ is not original, then it is extremely difficult to see how Av *dāter-*(=V *d(h)ātṛ́*) 'giving' gives Gs *dāθrō*, or, to take another attested example, *ātar* 'fire' gives Ins *āθrā* (cf S *dātrā*). These formations can have resulted only from a stem ending in -*tṛ/tr*-. But since we have Acp -*tṝn*, the original form stares us in the face. It is a well-known *sandhi* (=combination) phenomenon in Sanskrit that ṝ̆ + *Vl* (other than ṛ̆) = *rVl* (other than ṛ̆). So, *dātṛ*- or *pitṛ*- + ā/e (for Ins and Dp) give *datrā́* or *pitrā́* and *dātré* or *pitré* respectively – as happens more or less in Avestan.

Now, ṛ is very unstable and requires great attention in its pronouncement; otherwise it very easily gets distorted into ər/ar/ir/ur or *ri, ru* and so on. So it is not surprising that S *pṛt*- 'battle' is in Avestan *pər̊t*- and *mṛgá* '(wild) animal' is *mər̊γa*-. Now if -*ar* was the original ending (alleged PIE -*ter*, Av -*r̊r/tar* Gk -*ter/-tēr/-tār*, etc) why would the IAs change this simple sound into -*tṝn* and especially the difficult Acp -*tṝn* which requires the tongue to flick from the dental -*t*- to the retroflex -ṝ- then back to dental -*n*?... All phonological mutations go from the more to the less difficult, never the other way round.

This, indeed, is an irreversible movement – and not unverifiable reconstructions upon which nobody would seriously bet his/her life. This is not to deny, as said earlier (§1), that Avestan has, like other branches, archaisms lost in Vedic; but these certainly do not indicate that the IAs migrated c1700 from Iran to Saptasindhu.

c) I shall return to ṛ but before that, let us examine example no 6 in Schmitt (p 10). This is the contrast S *vāc*-

and Av *vāxš/vāhš*. Schmitt connects the Avestan form with Latin *vox*, as well. First, he rightly points out that whereas Vedic inflects *vāk, vā̆cam, vācā̆, vācé* etc, Avestan correspondingly has *vāxš, vācəm/vācim* (YAv), *vaca, vacō*. He explains that Vedic retains the long -ā- throughout, innovating in not showing ablaut, i.e. strengthening in strong cases Sing. nom, acc and weakening in the others (sing/pl Ins, Dat, etc) as Avestan does.

Yes certainly, Avestan does show this differentiation in this case but it does not do so in many other cases like *spaš* 'spy' *druhš* 'fiend', *vīš-* 'settlement' and YAv has Pl nom/acc *vāca* strong, but also *vaca* weak! Neither does Vedic with *jās* 'child' *druh, vi-/sam-rāj* (Av -*rāz*-), *viš* and many others.

What is quite revealing, however, is that while Av *vāxs-* is masculine, Av nominal compound *pa'tivahš-* is feminine like Vedic *vāc-* ! So the question becomes now "Is the Avestan declension here, a genuine archaism?" Why have two genders here? To me it seems that Avestan here, as often elsewhere, shows innovation in having a masculine noun.

The nom. *vāhš* certainly connects nicely with L *vōx* but differs from Gk óp-a óπ-α (*ép-os* επ-os) and contrasts with Toch A *wak* and B *wek*. So, some branches decided to keep the ending -*s* which then coalesced with the final consonant and others dropped it. But unless we have PIE itself we may conjecture to our heart's delight but never really know.

d) In among Schmitt's later examples is the Av *taršu* 'dry', cognate with Gm *þurzu* 'dry' and, of course, S *tṛṣú* 'thirsty' (p18). It is quite probable that, as Schmitt writes (also EWA 1991, 9), this meaning 'dry' is original and 'thirsty' secondary. But who shall bet his/her life on this?

Here we have many additional interconnected facts. Vedic has *dhánu, dhánva* also for 'dry land' and *śúṣka* 'dry': the former are not found in Iranian, the latter appears as *AV huška-*. Sanskrit has the verb √*śuṣ* > *śuṣyati* 'becomes/is dry' also 'languishes' and Avestan the verbal stem *haoš-* 'being dry'.

But Sanskrit has also the verb *tṛṣyati* 'thirsts' (causative *tarṣayati*, etc etc). This is present in several IE branches, with the same meaning (e.g. L *torrēre* 'thirst', Gothic *þaúrsjan* 'thirst') but is not found in Iranian at all. Thus *taršu* stands isolated by itself! Schmitt does not mention this simple fact. But he does, after many more examples, bring in the Av verb *parˀt-* 'to fight' saying it is absent in Vedic (p19). This is prejudiced selectivity again because Vedic has *pṛṭ* 'fight' and *pṛtanā* 'striving'. This appears in Avestan as *pəšanā -* : b u t how does this derive from *parˀt-*? How does *parˀt-* produce *pəšanā-* ? Must we not suppose that here we witness (**e17**) two lines of development later (not earlier) than Vedic? I certainly thing so. Furthermore, Vedic has the verbs *pṛtan-yáti* and (denominative) *pṛtanā-yati*. And in all these Avestan lexemes the retroflex/sonorant *ṛ* has been lost – something grossly ignored by mainstreamers like Beekes and Schmitt.

e) This kind of selectivity is shown in many more cases. E.g. the Av *mərˀti* 'death' is derived by Schmitt from PIE *mṛ-ti and equated with L *mors* and set against S *mṛtyú* (p19). But S *does have mṛti* 'death' as well; this is found in post-Vedic texts. However, to take an analogous case, *praśná* appears in Vedic texts only with the meaning 'question'; but it appears later in the sense 'turban' which links up with Gk *plekō*, L *plect-* and Gm *flehtan*, all 'knit, plait'! Consider also that *keśa* 'hair' (as an independent stem) does not appear in *RV* but *keśín* appears in the early 3.6.6 etc. while *-keśa* itself does appear as second member in a compound. Nobody could claim that *praśna* and *keśa* were not in Vedic: thanks to other evidences all we can say is that they were not used in the *RV*. The same holds for *mṛti*. Consequently Schmitt's example is utterly pointless, based on biased selectivity.

11. We could examine many more examples from Schmitt but I shall take up only two – for different reasons. (a) The cognates S *mīḍhá* 'reward' Av *mīžda* (=Gk *misthos* μισθός) (p6) and (b) S *snāván* 'sinew' and Av *snāuuarˀ* (p16).

a) This cognation *mīḍhá/mīžda* is important for Schmitt because he thinks that is shows an irreversible movement from archaic Av *mīžda* to S innovative *mīḍhá* (p23, note 13). As usual, in his presentation he drags in PIE, IIr and PIr, none of which are attested anywhere, and thus "proves" that the morpheme *ž* in Avestan is original and therefore Sanskrit *ḍh* was, according to the mainstream Doctrine, borrowed from Dravidian. (It never occurs to mainstream theorists that this method is utterly unscientific, not to say ludicrous or dishonest since PIE etc are sheer conjectures of modern scholars.)

For here we must consider also the cognation S *vṛddhá* (< *vṛdh+ta* ppp, like *buddhá* < *budh+ta* etc) and Av *vərə-z-da* 'grown'. The root √*vṛdh* 'growing' appears in Av as *varᵊd*: but here too the ppp has -*z*-. Is this original too?... And for S *buddhi* (< *budh+ti*) 'the state of wakefulness and awareness' Av has -*busti*-: here also the sibilant is not original, given the root-stem *bud-/baoδ*-! Yes there are the "laws" of mutation whereby -*gd*- > -*žd*- and -*dd*- > -*zd*-, but what of *bud/baud/baoδ*- > *bus-ti* and so many other anomalies? And how is -*z*- original since it is the end-result of a mutation?... These very changes into -*zd*- show that the -*z*- is not original. If this is so, then why not *mīžda* too?... Avestan has abundance of sibilants and affricates which, though not allophones, often interchange as in *zānu*- (=S *jānu*) 'knee' having Abp *žnubiias-čit*.

And if we go a little further, we find more incongruous facts. (1) S √*lih* (or √*rih*) 'licking' has ppp *līḍha* (as with √*mih* 'shedding water' >*mīḍha*). But Av has preserved little beyond *raēzaᶦte* '(s)he licks' (with N Persian *liš*). Greek has *leichei* λειχει '(s)he licks' and many derivatives but no *lis ch/leis ch*- (as in *mi-s-thos*). (2) Then √*īh* 'striving for' > ppp *īhita*; Av *iziia-/iziieiti* has -*z*- for S -*h*- and Gk *icha-/īchai-nō* ἴχα-/ἴχαινω (but, again no *īs ch*-) and turning the verb into one of the -*n*- classes! (3) √*snih* 'becoming oily, loving, attached' has ppp *snigdha* 'sticky'. Avestan has *snaēza*- but little else; in fact,

it does not appear in Beekes' Av root-list (1988) but Kellens (1995) gives it as *snij-* 'neiger' French for 'to snow'.. Greek has *neiphei* νειφει (and *niph-*) 'snows' but, again, little other than *nipha-* 'snow-flake'. In fact all IE branches have very little other than some basic forms meaning 'snow' or 'rain'. No Gk *nei/ni-s-* (as in *mi-s-thos*).

Consider another case: S *nīḍá* 'nest', Arm *nist*, L *nīdus*, Gm *nest*, Middle Irish *net* etc. Here it is thought that the origin was PIE *ni-sed-* 'sit, rest down'. The noun-cognation is not attested in Avestan despite the verbs (*had-*) *nišhida-*, in *hazdyaoṭ-* (note the sprouting of -*z*- from nowhere!), or *nišaδay-*. Sanskrit has many derivatives from *niṣad-* and *niṣid-* (e.g. *niṣad(-ana)* 'sitting (down)', *niṣed-ivas* 'who has sat down' etc), but linguists think that *nīḍá* came from IE *nizdó-* (> *nizḍá-*), from a hypothetical "zero-grade *-sd-*" of the root *(ni-)sed-* (Fortson 2004: 73). Sanskrit has no trace of such a zero-grade – nor any other one of the ancient IE tongues (except Gm *ne-st* and Arm *ni-st*)! Thus we are asked to believe that although Sanskrit almost everywhere displays an unparalleled retentive power, here it has lost the verb-stem and has preserved only the prefix *ni-* and the end of the stem -*d* turned into retroflex -*ḍ*- under the influence of Dravidian, since IE had no retroflex consonants according to the Theory.

Now we know from attested forms that in Sanskrit, final -*h* in noun-stems mutates into velar *k/g* (while initial consonant is aspirated – as in *duh* 'milking' > *dhugbhis*); or into retroflex *ṭ/ḍ* as in *lih* 'licking' > -*liṭ* and -*liḍbhis* for *madhulih* 'bee'.

Thus Sanskrit is quite consistent regarding √*lih* > *līḍha* and other derivatives, from the available evidence, which is more than can be said of Avestan and Greek. Root-noun *snih* 'dampness, moisture' has Ns *snik*; so this too is consistent (√*snih* > *sni-g-dha*). Root-noun *mih* 'mist' has no decisive attestations but the root √*mih* has both velar *k/gh* and retroflex *ḍh* : *meghamāna* and *mīḍhvams-* but all root nouns in -*h* have -*ḍ*- before the middle endings with -*bh*-. And the only dental

-t-su in Lp is thought to have been *-t* (Macdonell 1916: 56, §81).

Of course, the presence of *-z-* in Av *mīžda* is supported by Gk *misthós*, Gm *mizdō* and Sl *mьzda*. However, this does not indicate a movement out of Iran into Saptasindhu nor an irreversible process. Sanskrit has *lḥ* as alternative to *dḥ* so that *mīḍhá* is found as *mīlḥá* also. Now, an original, say, *-o- which would give *dḥa/lḥa* could well have given *-žḍ-* and with mispronouncement and simplification *-sth-* or any other similar conjunct.[7]

One more point. The stem *mižd-/misth-* etc in all the other branches have no primary cognates nor roots. Greek has *misthóō* 'I engage one for payment' but this comes from *misthó-s* rather than the other way round. The other branches have neither verb nor nouns related. Only Sanskrit has √*mih* > *mḗhati*, fut *mekṣyáti* and ppp *mīḍha* which is the same form as that of 'reward'. On the one hand it is very difficult to see how the two meanings (*mīḍhá* 'contest, prize, striving' and *mḗhati* 'urinates, sheds water') relate. On the other, five other branches have the cognate verb for 'urinating' with a sibilant or affricate or velar: Av *maēzaᵢti*, Arm *mizem*, Gk *omichḗn*, L *meieze/mingere*, Gmn *mīgan* Lith *mīšti*, Sl *mižati* and Toch *miśo*. The Sanskrit verb has the Gk *-ch-* in *mḗ-h-ati* and the Gm and L *-g-* in the Middle ptc *me-gh-amāna* or in the Sigmatic aor *ámi-k-ṣat* and of course its *mī-dh-a* but not a sibilant[8]. Furthermore Greek has *omichlḗ* ομιχλη 'cloud mist' (< *omich-*) and Sanskrit has *mih-* (root-noun) and *mihikā* 'mist' and *megha* 'cloud'. But all others lose the /h/ of the verb-stem: Av *maēγa* (=S *meghá-*), Arm *mēg*, Lith *miglá*, Sl *mьgla*.[11] So we have quite a mixed salad of stem-endings.

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[7] It is of humorous interest that Shakespeare has Kent in *King Lear* (2.2.35) call a nefarious character "thou zed, unnecessary letter"!

[8] Note the inconsistency, not to say mess, with regard to the "law" of palatalisation and the division into *satəm* and centum groups. Latin (*centum*) has the affricate *-z-* as well as velar *-g-*; Toch (*centum*) has palatal *-ś-*; Av, Lith and Sl (*satəm*) have velars as well! Sanskrit (*satəm*) has no palatal!

There is no reason or consistency in all· this. They are all related, obviously, but how?...

From the available actual evidence it is highly doubtful that Av *mīžda* is the prior or closer to the original form and, whatever be the case, it does not show a movement of IAs from Iran to India.

A final point. It is taken for granted that PIE had no retroflex (= 'cerebral' in the Indic tradition) consonants. But it is accepted that it had *ř* and *ra*. If PIE had these two retroflex sounds why should it not have the others, i.e. the five consonants found in Sanskrit?... It is only the highly defective reconstructions that forbid it because of the now discredited Aryan Invasion Theory which was the unacknowledged basis of the reconstructions. The AI Theory has been abandoned ('Immigration' replacing now 'Invasion') but the linguistic superstructure remains intact and dominant. Yet, H. Hock stated succinctly that **"retroflexion is found in many European forms of speech"** (1991: 78). And no linguist disagrees. So there is nothing very exotic or Dravidian about this phonological phenomenon in Europe[9].

b) Schmitt rightly points out that Avestan retains the heteroclitic *snāuuarə* 'sinew' (*-r/n-* stems like S *áha-r/n* 'day') against the S *snāvan* which is declined like other neuter nouns in *-an*. True, few traces of heteroclitic stems remain in Sanskrit compared to Hittite, which has many, but few with cognates in the other branches, and it does not have this particular stem. However, *a-snāvi-rá* 'without sinews' (*Īśā Up. 86)* is probably not one of them; this is most probably an adjective with the suffix *-ra* like *áva-ra, ug-rá, kru-rá* etc. Sanskrit has also *snāyus* and (later) *snasā* for 'sinew, tendon', so it should

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[9] MacDonell, precursor of many adherents to the mainstream linguistic Doctrine wrote: "The cerebrals [= retroflexes] are entirely secondary, being a specifically Indian product and unknown in the Indo-Iranian period. They are probably due to aboriginal, especially Dravidian influences" (1916: 8). Nobody knows what Indo-Iranian was like. No aboriginal or Dravidian influences are observable in the retroflexion of "many European forms of speech".

not be surprising that *snāvar* (or whatever) did not make it into the Vedic texts. (The word *kéśa* 'hair' also is not found in the *RV* but the adjectives *kéśin* (early 3.6.6 etc) and *kéśavant* (10.105.5) do appear there). That Sanskrit did have it is indicated by the presence of cognates in other Indoaryan branches: Pali *nhāru* (as Schmitt notes); Prākrit *ṇhāru*; Nepali *nahar*, also, most telling, Marathi *sāvar* 'muscle, sinew'.

Obviously this situation can hardly mean that Avestan is more archaic or, much more, that the IAs came to Saptasindhu from Iran.

Vedic *nṛ* and *nara* and PIE* *h₂ner*(?)

12. On the contrary, apart from the evidence presented so far here, the examination of the phonology of the Vedic and Avestan would confirm in numerous instances the posteriority of Iranian and the *Avesta* itself. Having examined the nominal stem *pitṛ*, let us now look at the sonorant *ṛ* and the stems *nṛ* and *nara*.

(e18). The PIE reconstruction of this stem for 'man' is *h₂ner*. This is given to explain the *a-* in Gk *a-nē-r* and *anar* in Phrygian, while Oscan has *ner-um* (Roman name of *Nero*), Welsh *ner*, Albanian *njer*, Armenian *air* and Avestan *nar-/nā-*. Vedic has both *nṛ* and *nāra*. In other words no other IE branch western or eastern has a stem with *an-* (Arm *air* is close).

Let us know look at the incidence of *nṛ* and *nara* in the *RV*. IE linguists comment profusely on *nara* and hardly ever on the declension of *nṛ* as if *nara* is primary and *nṛ* an anomaly to be consigned to non-existence. It is yet another paradox that IE linguists refuse to face squarely. The paradox consists in the simple fact that while the incidence of *nara* and *nṛ* is spread across all the Maṇḍalas, the *RV* has only two compounds with *nara+* and more than 15 with *nṛ +*.

If, as the received doctrine has it, *nara* (< *IE *h₂ner!*) is older than *nṛ* and *nṛ* is an IA innovation, or whatever, but, in

no way, the origin of *nara*, then we should find in the *RV* more compounds with nara+ as first member. But the opposite is true, as shown by Lubotsky's *Concordance...* There are only two *nara-* compounds: *narā-śaṃsa* 'men's desire/praise' (it is an epithet of Agni, occurring twice in Bk 2, once in Bk 3, once in Bk 7: i.e. only 4 times in early and middle) and seven times in the late Books); *nareṣṭha-* 'sought/worshipped by men' (only once in 4.33.8a) – a total of 12. As a list of all the *nṛ-* compounds would be too long, I give a selection: *nṛcākṣas* 'watching men' (more than 10 times spread in all Maṇḍalas); *nṛjít* 'conquering men' (2.21.1b); *nṛ́tama* 'most manly' (17 in early and middle Bks and 10 in late); *nṛpáti* 'men's lord' (9 in early Bks, 8 in late ones); *nṛpátnī* (1.22.11b); *nṛpéśas* 'man's beauty/form' (3.45); *nṛvát* 'having men' (16 in early and middle Bks, 6 in late ones); *nṛṣádana* 'men's assembly/residence' (3 early, 3 late); *nṛhán* 'man-slayer' (4.3.6d; 7.56.17c); to these should be added *nṛbāhú, nṛmádana, nṛvāhana*, etc: a total of over 90.

Thus we have a total of 12 occurrences for *nara-* compounds and more than 90 for *nṛ-*compounds.

Here, one might argue that the older stem *nara* is falling in desuetude while the younger *nṛ* ascends in frequency. But what we find is that in post-rigvedic texts the *nṛ-*compounds decrease and the *nara* ones increase dramatically: e.g. *nara-kāka*, 'crow-like man', *nara-tā/-tva* 'manhood', *naradeva* 'king, men's god', *naranātha* and *narapati* 'king, men's lord', *narayāna* 'man-drawn cart', *narādhi-pa/pati* 'king', *narottama* 'best of men' etc etc.

Then OAv has *nərəbiias-ca* (YAv *nərəbiiō*). Here the -*ərə*- seems to reflect -*ṛ*-. Sanskrit has no *narebhyas* for Dp but only *nṛbhyas* in early and late Maṇḍalas; in fact all oblique cases have the stem *nṛ-* (Ac *nṝn*, Ins *nṛbhis*, Ab *nṛbhyas*, gen *nṛṇām*, L *nṛṣu* – all p); in post-rigvedic texts *narām* is also found.

Moreover, the forms *nar-a, nar-ya*, 'heroic, human' *nār-a* 'human', *nār-ī* 'woman' etc, can be seen as quite normal

derivatives, primary or secondary (r —> guṇa *ar* and vṛddhi *ār*). Consequently, *nṛ* is the prior form and *$^*h_2ner$* is utterly irrelevant. This Av *nar-* would seem to correspond to the derivative *nar-a*. Although S *ṛ* does sometimes appear as *ar(ə)-* in Avestan, the usual correspondence is *ərə*: e.g *dṛk-/š, dərə-s-; pṛt, pərət-; mṛta, mərəta-* etc.

Phonological changes favouring Vedic anteriority.

13. As we saw earlier in §2, the sonorant *ṛ* in Sanskrit and its mutations in Avestan is the first example of phonological change used by comparativist Beekes in the early pages of his Avestan *Grammar* (1988) to show that many words in this language had "more archaic forms." He then took on the poetic metres and subsequently dealt more extensively with other phonological changes. Indeed, if one looks at any Avestan Grammar (Jackson 1892, Geiger & Kuhn 1903, Spuler, ed, 1958, Hoffmann 1987, etc), one will discover very soon numerous similar mutations showing, like the aspects we have so far examined, that Sanskrit, generally, is indeed more archaic. I shall present only a few cases because after a while the exercise becomes tedious.

(e18) Ns ending for masculine in Avestan is *-ə̄* and *-ō*: e.g. OAv *vasə̄/vasō* 'willingly' (= S *vaš-* 'wanting'), *hazə̄/hazō* 'might' (= S *sáhas*), *sarə̄/sarō* 'head' (= S *širas*) etc. So also pronouns: e.g. *kə̄/kō* 'who?' (= S *kas*), *yə̄/yō* 'who' (S *yas*). However Avestan has *kas-ca/cit* 'who-ever'; *yas-ca* 'he who'; even has *-cit* (= S *saḥ* > *sa/so*) 'he'. Surely this indicates that the *-as* ending is original in IIr and was mostly lost in Avestan ...

And if original here, why not original elsewhere? There is no trace of *-os* in Sanskrit or IIr. On the contrary, Sanskrit *-a* often turns into *-o* in Romani or Gypsy (as well as in Avestan): e.g. S *śmaśru* > Gyp *šoša*, 'beard' S *śaśa* > Gyp *sosoi* 'hare', S *khara* > Gyp *kher* 'donkey', S *jana* > Gyp *jeno* 'person' (both *-e/o*) etc. But we find a similar process in English also: OE *bald, baðian, faran, fram, hat, hāl, ham* > Mdn English *bold, bathe, fare, from, hot, hail, home* (etc, etc).

(e20) Beeks accepts that Sanskrit·retains the more archaic form in many more cases, He writes, for instance, that Avestan has long *ū* for short "but precise rules cannot be established" (1988: 42): e.g. *drūjō, drujəm* (S *drúh-*), *yūjən- yuxta* (S *yúj-*) etc. So also *ī* for short: e.g. *īšti* (S *iṣṭí*), *vīs-* (S *víš*), *vīspa* (S *víśva*) etc. All these examples are in Old Avetan, as are several cases of shortening internal *-ā-*: e.g. *nanā* (S *nánā*), *yavat* (S *yā́vat*) etc.

(e21) S *-a-* often appears as *ə/i*: e.g. *yam* = OAv *yə̄m/yim*, etc. Then

(e22) S *-e-* appears not as *ē* or *ēi/āi* but *-oi-*: e.g. S *yé* = *yōi* (*yaēca*), *gáve* = *gavoi*, *hástebhyas* = *zastābya* etc.

(e23) We find an epenthetic nasal and clusters *ng, ngr, ə̄ng, ə̄ngh, nghu* (LAv *ŋh*): e.g. *janghati* (S = *gam-/gant-*), *maŋhā* (= S *manasā*), *mə̄nghī/meŋhi-* (S *man-*), Gs of m. pronoun *yeŋhe* besides *yehe* (= S *yásya*), also Abs f. *yeŋhāt* and loc *yeŋhe* (S *yásyās, yásyām*), *vanhah-* besides *vahyah-* (=S *vásīyas*), and so on and so on.

(e24) There are many more like *abhí* = Av *a'β i* 'unto, to'; *sárva* = *ha"rva* 'whole'; *tyája* 'relinquishing' = Av *'þyejo* (and *a* = *e*) 'destruction'; *vaktra* = *vahə̄dra* 'word'; *yahvī* = *yez'vī* 'young one' (f.), etc, etc. Or *-ya* = *ī* and *-va* = *ū̆* as in S *manyamāna-* 'thinking' = *ma'nimna; támasvantam* = *tamanhuntə̄m*; etc, etc.

Parallels in poetic metres.

14. It is difficult to see, after examining all these phonological devolutions in Avestan, how comparativists like Beekes and Schmitt can claim that Avestan is more Archaic than Sanskrit[10]. However, there is another type of evidence demonstrating the posteriority of Avestan.

On pages 5-8 Beekes (mostly following Monna 1978) analyses the structure of the five Gāθās, ascribed by tradition

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[10] But not all make this claim. Iranianists Humbach and Hoffmann do not, as far as I have seen.

to Zaraθuštra himself and constituting the oldest part of the *Avesta*. The five Gāθās comprise altogether Yasnas 28-34 and 43-53, excepting 52. This becomes the basis of the division of the language into Old or Gathic Avestan and Late or Young Avestan. (See also Watkins 2001: ch 21.)

Y(asnas) 28-34 constitute the 1st Gāθā *Ahunavvaiti* and have stanzas of 3 lines, the norm line being 7+9 syllables with some (deliberate) deviations (i.e. 6/7 +8/9/10) in all Yasnas. The stanza structure is thus 3 X 16. (This resembles the rigvedic Mahāpaṅkti which is 6 X 8.)

Y 43-46, 2nd Gāθā *Uštavaiti*, have stanzas of 5 lines, the norm being 4+7 syllables. Here too are some deviations of 3/4 + 7/8. (The structure of 5 X 11 resembles the rigvedic Atijagatī or Śakvarī.)

Y 47-50, 3rd Gāθā *Spəntā.Mainyu*, have stanzas of 4 lines, the norm being 4+7 with some deviations of 3/4/5 + 6/7/8. This structure (4 X 11) resembles the rigvedic Tṛṣṭubh, which, however has the caesura after the 7th syllable.

Y 51, 4th Gāθā *Vohu.xšaθra*, has stanzas of 3 lines the norm being 7+7 with only two deviations of 6+7. This structure (3 X 14 or 6 X 7) has really no strict equivalent in the *RV* but resembles a catalectic Mahāpaṅkti.

Y 53 "presents more difficulties than the others' (Beekes, p 7) because it has a mixed, rather complex metre. It has sequences of 7 syllables interspersed with lines of 5 syllables or lines of 7+5 and 7+7+5 with negligible deviations (Beekes, 7-8). The structure can be 12, 12, 19, 19, or 12, 12, 7, 12, 7, 12. There is nothing exactly equivalent in the *RV* but obviously it approaches the Atiśakvarī or Atyaṣṭi or Atidhṛti mixed stanzas.

A. MacDonell examines the Vedic metre in his *Vedic Grammar* (1916: 436-447) and points out that there are similarities in the structure of the two traditions without analyzing them too thoroughly. It is his text that I consulted in detail. Now, it is obvious that the third Gāθā Yasnas 47-50 use the Tṛṣṭubh stanza which has 4 lines of 11 syllables. The

Gathic stanza has the caesura after the 4th syllable while the Vedic one has the caesura after the 7th. The Tṛṣṭubh is the commonest and one of the very oldest stanzas, found in about two fifths of the *RV*. This and the Gāyatrī stanza (3 lines X 8 syllables), which is just as old and the second commonest one, and forms one quarter of the *RV* Saṃhitā. This is found in some post-Gāθic parts of the *Avesta*.

(e25) However, of interest to us are the other stanzas, starting with the 1st Gāθā and the structure of 3 X 16. This corresponds to the rigvedic Mahāpaṅkti (strictly 6 X 8). The importance of this lies in the incidence of the rigvedic stanza in Maṇḍalas 1 (only the last hymn, 191), 8 and 10.

Y 43-46 have the structure 5 X 11 which corresponds to 5 Tṛṣṭubh lines, all with the caesura after the 4th syllable as in the first verse; but this is, in fact, the structure of the Atijagatī or Śakvarī stanza, as termed by the ancient metricians. This stanza occurs in both early Maṇḍalas (6.2.11; 4.6 etc; 7.50.4) and late (5.2.12; 10.115.9).

Y 47-50 have, as was said already, the Tṛṣṭubh stanza which occurs with great frequency in all the Maṇḍalas.

Y 51, the 4th Gāθā, with its 3 X 7+7 has no exact equivalent in the *RV* but does resemble the catalectic Mahāpaṅkti.

Finally, Y 52, the 5th Gāθā, with its longest and slightly complex stanzas of 12, 12, 19, 19, or 12, 12, 7, 12, 7, 12 approaches the rigvedic mixed, complex stanza of Atiśakvarī (5 X 8, 12, 8) or Atyaṣṭi (2 X 12, 3 X 8, 12, 8) or Atidhṛti (11, 16, 2 X 8, 7, 11, 7). These too occur only in the late Maṇḍalas 1, 8, 9, 10.

Thus, again, if the IAs had separated from the common IIr community, the early rigvedic hymns should have all the corresponding stanzas from the old Gāθic yasnas, i.e. the Mahāpaṅkti and the mixed ones; but, these are absent from the early Maṇḍalas. On the contrary they are found in the later hymns. This means that the *Avesta*, the older parts of it, were composed after the corresponding metres had been developed

in the *RV*. In other words, this evidence adds to the indications that the Iranians branched off from the Saptasindhu – after the Kaṇva hymns in Bk 8.

Sarasvatī and Hara*vaitī*

15. There are many more interesting aspects we could look at but enough has been adduced. If one is not convinced by the evidence presented thus far, then nothing short of a miracle would produce conviction. Here I shall deal with one final case, that of the much discussed *Sarasvatī / Hara*vaitī*.

First, let me recount the details of Vedic Sarasvatī which even vedicists disregard and sidestep with the deliberate, active ignorance that characterizes many mainstreamers when their dearmost and unquestioned ideas are doubted by non-mainstreamers. Sarasvatī is the name of a large river, a goddess and a celestial stream. The river is mentioned in all books except the fourth and almost everytime it is a very large river that nourishes the people (usually the tribe of the Pūrus but not exclusively) inhabiting the regions adjacent to its course: *RV* 6.61, an early hymn, stresses this; as (6.52.6) it is fed by three or more other rivers 2.41.16, a middle hymn, calls Sarasvatī 'best river, best mother, best goddess'; late hymns 10.64.9 and 10.177 call upon her as great and nourishing, providing sustenance and prosperity. Then, the White Yajur Veda (34.11) states that it is augmented by five tributaries!

An important point is that the river is said to flow "pure from the mountains to the ocean" (7.95.2). Various doubts have been raised regarding this version but now many archaeologists say that the river flowed down to the ocean before 3600 BCE (Possehl 1998; Lal 2002; Allchin B 1999) and scientists have traced the full course with satellite

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[11] I ignore Lawler's article in Science 2011 (332:23) 'In Indus times the river did not run through it' since it is now disputed by several geologists and hydrologists in India.

photographs (Sharma et al 2006). Danino gives the full story and adduces the examinations of the underground water-deposits (2010)[11].

But archaeologists tell us also that the river dried up completely c 1900 BCE due to tectonic adjustments, shifts of river courses and other climatic changes (Rao 1991; Allchins 1997; *et al)*. Due to the subsequent desiccation of the region, the inhabitants moved eastward.

Yet, the mainstream Doctrine would have us believe that the Indoaryans arrived from Iran in this deserted region c 1700-1500, settled here and composed hymns praying to and praising a dried-up river as the "best river" – while the natives had left! This is not merely unreasonable but utterly absurd. But the Doctrine has even subtler aspects. Some linguists claim that the name Sarasvatī was given to this river (its desiccation notwithstanding) in memory of the Arachosian river Hara[x]vaiti (in Iran) which the Indoaryans had left behind. Here now we have, beyond absurdity, both inanity and dishonesty. For how could the IAs give the name of their cherished river to one which had dried up?

Please, consider another fact. The Sarasvatī is fed, as was said, by at least three (possibly more) rivers and is 'swollen' *pinvamānā* (6.52.6); moreover, it is endless, swift-moving, roaring, most dear among her sister-rivers and, together with her divine aspect, nourishes the Indoaryan tribes (6.61.8-13). How could such attributes be given to a dried-up river?...

Thus we must take it that in all the books of the *RV*, early and late (10.64, 177), the Sarasvatī is a mighty river and even in the third millennium, according to Archaeology, hundreds of communities and some cities flourished along its banks – until the eventual drying up c 1900. Consequently it is totally impossible that tribes of immigrants could come and settle in the arid area and write poetry praising a river that no longer flowed.

16. But what of the Iranian name *Hara[x]vaiti?*

This name appears in the first chapter of the Vidēvdād

along with placenames Haetumant (=Helmand), Māuru or Margu (= Margiana), Bāxδī or dhri (=Bactria) etc and, of course, Haptahǝndu.

Haraxvaiti means simply 'one who has *harah-*'. But *Haraḫ-* or *Hara*ˣ- is a stem entirely isolated in Avestan: it has no cognates, no other related lexemes.

This fact is extraordinary when contrasted with Sanskrit *sáras* and *Saras-vatī!* Because the Sanskrit word *sáras* has a host of relatives and can be derived directly and very lawfully from a root (*dhātu*). The root is √*sṛ* and in the ancient *Dhātupāṭhas* (=lists of root-forms and their meanings), it is given as class 1 (*sṛ* > *sar-a-ti*) and class 3 (*sṛ* > *si-sar-ti*) both meaning 'movement' *gatau*. The latter one is found only in Vedic texts. Modern philological studies suggest movement of water, 'flowing, rushing, leaping'.

But the wonder of wonders is that this has many derivatives in Sanskrit and many cognates in other IE branches. In Sanskrit the verb is found conjugated in both classes. Its cognates appear in Gk *hallomai*, L *saliō*, Toch B *salate* – all 'leap'. The dhātu has also many nouns like *sṛt, sṛta, sṛti, sṛtvan* and *sara, sarana, saras, sarit, sāra* etc, etc. There are also cognates in Greek, like *hélos* 'swamp' and *héleios* (S = *sarasyá*) 'of/from swamp'.

But nothing, not one cognate, in Avestan other than the lonely and pitiful **haraḫ-*!

Observe now two absurdities implicit in the Doctrine. The Iranians who stayed put in Iran lost their own root **har/ *hǝrᵊ-* or whatever and all derivatives, while the IAs who moved further away retained this thoroughbred IE root and all its ramifications. And then they gave the name Sarasvatī (with the change of *ha* > *sa*) not to a large river like the Indus but to a dried-up stream in memory of the Haraxvaiti in Arachosia! Or, an even more incredible scenario, the IAs on arrival at Saptasindhu proceeded to generate out of the PIIr **harah* stem, verb-conjugations, numerous nouns and adjectives and what else, which are by a most happy

coincidence cognates with lexemes in other IE branches!

The only reasonable explanations for this situation is that **the Iranians had been with the Indoaryans and at some unknown date moved out of larger Saptasindhu west and north into Iran**.

Expansion and migration of Vedic tribes.

17. As we saw in §4 **(e6)**, Saptasindhu is the land of the Seven Rivers with Sarasvatī as its axis: in this region, according to all vedicists from Max Muller to Keith and to Witzel, were composed the hymns of the *RV*. However, we should bear in mind that the number 'seven' has magical, occult connotations as well and the rivers were more than seven. In fact, the region inhabited by the IAs even at the earlier stage of the composition of the hymns was much larger expanding into all directions but always having as its axis the Sarasvatī *RV* 6.61.9:

sā́ no víśvā áti dvíṣaḥ	'[Sarasvati] who follows Cosmic Order
svásr̥ anyā́ r̥tā́varī	has spread us [the five Tribes]
átann áheva sū́ryaḥ.	beyond enmities, and her sister rivers
	as the Sungod the days.'

And in st 12 are mentioned the five tribes.

See *Figure 2 : Map of North India showing Sarasvatī and the five Vedic tribes* in Chapter 3.

Eventually the expansion moved well out of the larger Saptasindhu – especially west and northwest. In Baudhāyana's Śrautasūtra 18.14 we read of two migrations: the eastern one Āyava into the Gangetic plains and further; the western one Āmāvasa comprising the Gāndhāris, Parśus (= Persians) and Arāttas (= Ararat, Urartu?). The Persians or Iranians record in their texts that they had passed from Haptahəndu and Haraxvaiti. This is the approximate situation.

See *Figure 3: Map showing the "seven rivers" and Sarasvatī; various sites with Harappan artefacts far from Saptasindhu; also the two movements eastward by Āyu and westward by Amāvasu* in Chapter 2.

Concluding remarks.

18. The conclusion from the evidences discussed in the preceding sections is an easy one. The *Avesta* is post-rigvedic and the Avestan language full of losses, attritions and mutations.

The relative earliest possible date for the Gathic *Avesta* is the period of the composition of the late books of the *RV* as many sensible scholars have pointed out (Hopkins 1896, Tovadia 1950, Humbach 1991, etc). This is confirmed by the correspondence of the proper names (§8) and poetic metres (§13). But all this is an approximate, rather general estimate. We can be much more specific thanks to several linguistic studies after 1980.

There are 59 common Sanskrit-Avestan words examined in §§6-7 which occur in post-rigvedic texts. Of these 59, 14 are, according to Lubotsky (2001), loanwords into Indo-Iranian. All these 14 are found in post-rigvedic texts. This means that either they were borrowed independently by Iranians and Indians after the Iranians split off, or that they were borrowed after the *RV* composition, during the common IIr period in larger Saptasindhu, and the Iranians took them along when they moved away northwestward. This is supported by the use of the periphrastic perfect which has as auxiliary the verb *as-/ah-* 'to be' (see §4).

However, we found at least 15 common lexical items that occur in post-Vedic texts. This would mean that the *Avesta* was composed after the Vedic period – which makes it very late. Or it could mean that the words were in Sanskrit even during the Vedic period but did not make it into any Vedic texts.

For the *Avesta* as we have it, I would settle for a post-rigvedic date. This would apply even for its oldest parts, the *gaθas* and the date would be within the late Vedic period.

Finally, not only was there no Invasion or Immigration into Saptasindhu but, on the contrary, after the Vedic expansion to the West including Gandhara and Bactria, the Indoaryans moved even farther west in small numbers of wise men (5.10.6, 10.65.11) to spread the Aryan laws; or larger numbers of "heretics" distanced themselves from their "orthodox" brethren; or others left to explore and seek new opportunities. This northwestward migration would have progressed from Bactria rather than Saptasindhu proper. The date for these westward movements would be much older than is thought and naturally after the melting of the ices.

So I am inclined to agree with Misra (2005) who put the Old Iranian languages on the same level as Middle Indo-Aryan – even though Schmitt does not think this serious.

5. Indo-European Isoglosses: what they (don't) show us.

1. Comparativist H.H. Hock set up a diagram showing the dialectological view of IE (= Indo-European), which shows several isoglosses. He used this to argue against the probability of the PIE (= Proto-Indo-European) homeland being in Saptasindhu, i.e. the Land of the Seven Rivers in what is today N-W India and Pakistan. In his paper, he first gives the general background and then the crux of his argument.

> "[T]he early IE languages exhibit linguistic alignments which cannot be captured by a tree diagram, but which require a dialectological approach that maps out a set of intersecting 'isoglosses' which define areas with shared features, along the lines of Figure 4. While there may be disagreements on some of the details, Indo-Europeanists agree that these relationships reflect a stage at which the different Indo-European languages were still just dialects of the ancestral language and as such interacted with each other in the same way as the dialects of modern languages" (Hock 1999:13).
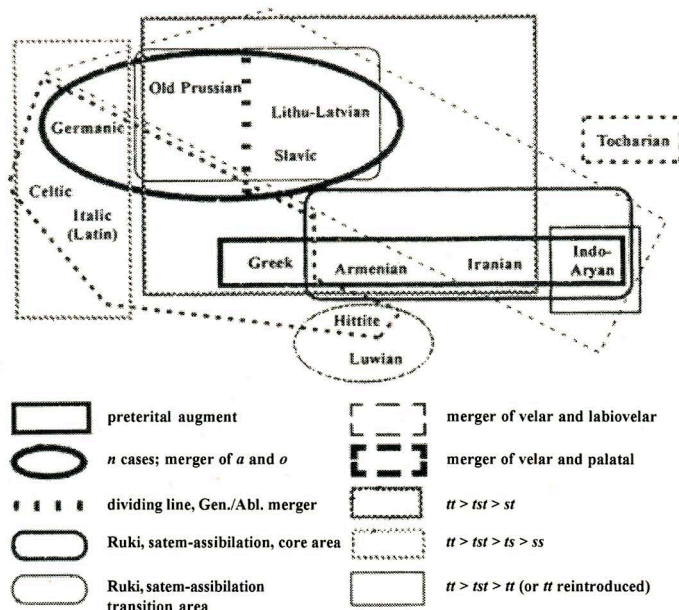
Figure 4. Hock's view

"To be able to account for these dialectological relationships, the 'Out-of-India' approach would have to assume, first, that these relationships reflect a stage of dialectal diversity in a Proto-Indo-European ancestor language within India. While this assumption is not in itself improbable, it has consequences which, to put it mildly, border on the improbable and certainly would violate basic principles of simplicity. What would have to be assumed is that the various Indo-European languages moved out of India in such a manner that they maintained their relative position to each other during and after the migration. However, given the bottleneck nature of the route(s) out of India, it would be extremely difficult to do so. Rather, one would expect either sequential movement of different groups, with loss of dialectological alignment, or merger and amalgamation of the groups, with loss of dialectal distinctiveness. Alternatively, one would have to assume that after moving out of India, the non-Indo-Aryan speakers of Indo-European languages realigned in a pattern that was substantially the same as

their dialectological alignment prior to migration a scenario which at best is unnecessarily complex and, at worst, unbelievable. The 'PIE-in-India' hypothesis thus runs into severe difficulties as regards plausibility and simplicity. By contract, there is no problem if we accept the view that Proto-Indo-European was spoken somewhere within a vast area from East Central Europe to Eastern Russia." (Hock 1999:16-17)

2. Hock's presentation has been used by many writers for and against the Out-of-India hypothesis. But before going further, let me make three clarifications.

First, a description of the isogloss: it is a distinctive feature, phonetic, lexical or grammatical that is shared by two or more dialects or (groups of) languages. Thus, to give an example, Greek, Armenian, Avestan, Vedic and Tocharian have a prohibitive particle **mē/mī/mā** but other IE languages, Anatolian, Slavic, Italic, Celtic, Germanic and Baltic have variants of **na/ni**. This prohibitive (or inhibitive) particle is found in suggestions, instructions and commands as in *"do-not (or, must/should not) say or do something"*. So here we have two isoglosses shared by different related languages and hereby dividing them into two groups. Later on I shall deal extensively with this isogloss.

Second, literally speaking, 'Saptasindhu' refers to the area of seven rivers and the two valleys of the rivers Indus and ancient Sarasvatī from the Himalayas down to the Arabian Sea, and extending from the Indus to the Gangetic plain in the east. Yet we should bear in mind that archaeology as well as many references in the *RV* (= *Ṛgveda*) indicate that the Vedics occupied a much larger area both to the west of the Indus well into Afghanistan and to south of the Ganges, down to the Vindhyas. And th*is area was populated by the five tribes (pañca-kṛṣṭi/-jana-)*: the Purus in the central region of the Sarasvatī, the Turvaśas in the east, the Yadus in the south, the Anus in the west and the Druhyus north and north-west. *RV* 6.61.9 and 12 indicate with great clarity that the five tribes

(*páñca jātāḥ*) have spread east and west beyond (*áti*) the seven rivers. The spread to the west would cover Bactria too.

See Figure 2. Map of *North India showing Sarasvatī and the five Vedic tribes* in Chapter 2.

Third, wherever I write of Sanskrit I mean Old Indic or Vedic but out of deference to the Vedic tradition which is very, very old, I keep the name used by the old native linguists. Moreover, I do not regard Sanskrit as preserved in the *RV* or other Vedic texts to be the PIE language. I think PIE was a much richer and more powerful language than Vedic and what the futile and confused efforts at reconstruction of PIE show it to be; Sanskrit is, of course, a language that devolved from it as did the other IE branches. But I do think and will demonstrate that Sanskrit is closer to PIE and, despite its innovations and losses, preserves many more archaic features than any other branch.

3. I could not locate a monograph study of the isoglosses as a subject on its own right although many scholars refer to them (e.g.: Mallory J. and Adams P. 2006). The two Russian linguists Gamkrelidge and Ivanov (1995)[1] have the whole chapter 7 of their opus magnum devoted to a discussion of the isoglosses but they list only 16 of them and examine several subcategories whose value is doubtful; on this basis they divide the IE languages into groups and subgroups and have them leave the original homeland in a sequence that seems confused and contradictory. (Their choice of Armenia or the larger (trans-)Caucasian region as the urheimat is thoroughly unconvincing). Szemerényi (1996)[2] and other IE linguists present some or many isoglosses scattered in the pages of their

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[1] Hereafter, G&I and page number only.
[2] Hereafter, Szemerényi and page number only.

books as they deal with changes and similarities of sound and morphology in the IE branches. I have collected a large number of them from different publications.

As said already, many scholars used the isoglosses as an aid to determine the PIE homeland: see for instance G&I (1995), Winn (1995)[3], Witzel (2002), Jamison (2006) and others. An interesting paper is one by Bridget Drinka in which she attacks the Out-of-India hypothesis as expressed by Kazanas in the 2002 JIES debate; among other polemic weapons, she uses the isoglosses (2009)[4]. In this she utilizes fully Hock's ideas in the article mentioned in §1, above. Her main interest lies in a new model of the language family tree refined with waves and stratified reconstructions and involving cladistics. So before I tackle the isoglosses I shall examine some of these other aspects in Drinka.

I must admit at the outset that I don't always understand fully what Drinka writes and that I don't think highly of IE reconstructions and don't consider this comparativism as a "science". For instance, terms like "cladogram, phylogenetic" etc are borrowed from the biological sciences while "areal, stratification" etc are borrowed from Geology[5]. But when I meet the term "instantiation" (Drinka, p6) I stop not really knowing what to make of it. I find it very difficult to think that I am dealing with a science fully grounded in the realities of language as we ordinarily know and use it. All these specialized terms, the artificial models, the reconstructions that exist in no known texts and cannot be verified and the endless hypotheses — they all seem to belong to a world of airy-fairy speculation.

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[3] Hereafter, Winn and page number only.

[4] Hereafter, Drinka and page number only.

[5] Many more arcane terms are used in other studies: ergative, stative, acrostatic, proterokinetic, ductus, lenition etc etc — most of them of Greek or Latin derivation.

Moreover, one meets repeatedly references to innovations in Drinka (and others) but at no stage are we offered a full and convincing explanation of how she has determined what is archaic and what is innovative. Other scholars do much the same — all in a world of speculation, which, however, is taken as reality and they build upon it and "refine" it and present it as historical fact! But as Ph. Baldi wrote: "Many points of controversy surround the reconstruction of PIE, and indeed surround any reconstruction effort. Some are methodological questions (for example, how do we distinguish archaisms from innovations?); some are philosophical (for example, what kinds of evidence are admissible in reconstruction?); some are simply differences of opinion based on the preconceptions and orientation of the investigator (for example, which is more archaic, Hittite or Sanskrit?)" (Baldi 1983, p.14-15, parentheses in the original). Nonetheless, these authors offer guesses and theories of the type: "Hittite (or Anatolian) seems to be the first dialect to branch out from the PIE unity and since Hittite has only two genders, the feminine gender in the other IE tongues is an innovation". Ah so! But how do we know that Hittite was the first to break off? Ah well, it has archaic features like laryngeals (which, we note, exist in no other IE tongue, but exist abundantly in the near-eastern milieu where Hittite first appears in historical times), only two genders and a simple verbal system (which could be the result of attrition and loss), the isogloss **"r"** which marks mediopassive forms of verbs (but which appears also in Tocharian in the east and Italic in the west and in some degree in Sanskrit and in Celtic), or the heteroclitic neuters in **−r/n** (which, again, appear in Latin, Greek, Avestan and Sanskrit), and so on. Therefore, it was the first to branch off. **So we have a wholly circuitous and rather defective thinking.**

Surely, the only way we could be absolutely certain about archaisms and innovations would be to have the PIE language itself? But this is found in no known documents.

4. Defective thinking is shown in at least two other respects: one, when an attempt to judge how an innovative move is made by means of a parallel from modern times and two, when she cites the 2002 JIES debate giving my article and the comments of some objectors, Huld 2002, Zimmer 2002 and Mallory 2002, but not my reply to them and to the other six hostile comments (Kazanas 2003).

a) In the first instance, she cites P. Trudgill who "demonstrates" that innovations, at least modern ones, "do not move in steam roller-fashion across the countryside, but jump from one large urban center to the next largest (though not necessarily contiguous) urban center skipping over the intervening territory" (Drinka 12). The example given is the spread of the uvular **r** of Paris to Brussels, Cologne, Berlin, Torino etc but not in smaller communities like Osnabrück, Luxembourg or Bergamo.

Well, yes, very good. But this is rather to be expected. Smaller communities tend to be more conservative and, because of smaller numbers, movement in and out of them is less. In addition, which is just as important, we have today much faster means of travel — cars and trains and so can easily bypass small communities that do not immediately interest us. All this was quite different three or four thousand years ago when IE tongues were moving towards the form in which we first find them.

So the parallel is quite irrelevant.

b) I wonder why Drinka ignores rather rudely my 'Final Reply' which deals with Huld's and Zimmer's strange objections (Kazanas 2003:§4-6). She cites Huld who wrote (2002:356) that IE is a "linguistic concept which demands linguistic evidence." However, I was not writing about "IE", whatever that is, but about the unfounded notion that IAs (= Indoaryans) invaded Saptasindhu c1700. What linguistic evidence is needed for the facts of the invasion and of the date? Linguistics cannot without documentation provide dates

in these prehistoric periods. Only Archaeology and related disciplines can do this. And Archaeology, Anthropology etc tell us in no uncertain terms that there was no significant entry into Saptasindhu from 4500 to 600 BCE (Kazanas 2002, 2003). So how did Sanskrit appear in that region?... I don't suppose Drinka will claim that the *dhātus* and their primary and secondary derivatives and their dizzying inflectional system flew in like pollen on the wind? No, it is too absurd.

Do these eminent linguists know, or do they want to know, what was going on in real-life human terms in that area at those times, i.e. 1700-1500 BCE?

There was desiccation and the plains were turning into desert as, after earthquakes and other subterranean tectonic movements, rivers changed courses, some flowing into the Sindhu and others into the Ganges; and hot winds and dust, coming from the west, blew over those plains and valleys. And archaeologists trace a steady relocation of the communities from c1900 BCE as they moved from the once fertile region away to the east, the Gangetic basin. Perhaps some of these people travelled west and north, met the IEs learnt the language and came back and spread it among their kith and kin as a panacea against the steady collapse of their civilisation? Yes, this is absurd also!

So how and when did Sanskrit enter into Saptasindhu with such force that it sanskritised the whole area and the Gangetic plain eastward?

There is, of course, the new myth that the IAs came in waves, in small numbers of peaceful immigrants having assumed the culture (i.e. arts and crafts and social habits but not the language!) of the natives and so left no traces of their entry, as described in detail by Witzel (2005, 2001). How did all the waves manage to absorb the native culture beforehand? And, more important, how did these "small numbers relative to the indigenous population" as S. Jamison put it (2006) accomplish the amazing feat of sanskritizing an

area as large as France and Germany?... Only conquest and coercion could have done this, but archaeologists tell us now, again in no uncertain terms, that there was no such (invasion and) conquest. And finally, if they left no archaeological traces, how do we know they ever immigrated there? Is it not very absurd thinking?

The fact that Zimmer likewise uses linguistic arguments (2002:407) throwing in the difficulty of explaining "the remarkably archaic features of Old Irish", if the Celts had moved so far from an Indian urheimat (Drinka 29), is really neither here nor there. It merely reveals the mainstream hollow thinking on this matter. All IE branches preserved some archaic features, linguistic, literary and/or social. But no comparativist that I know claims that Old Irish has more archaic features than other branches. After all, Drinka herself couples Hittite and Germanic (not Celtic) as having evidences of archaic features (2009:2). Then, Zimmer himself writes at the end of his piece that those ancient times were difficult and one cannot be certain where the urheimat was. Did not Drinka read this?

The only remotely linguistic evidence of relevance is the assertion of the poets of the *Ṛgveda* that they and their ancestors had always been here, in Saptasindhu (*RV* 4.1.3 & 7.76.4). But see also further down, §18, conclusion III and citations from *RV* and Baudhāyana.

Mallory, yes, takes an archaeological tack and shows that potential models of the Out-of-India Theory are improbable. I can live with that. What Mallory does not do is to show how and when the IAs entered into Saptasindhu and this is what concerns me. I have no archaeological training as such but did spend considerable time reading Western and Indian archaeologists, experts on the Sindhu Sarasvati Civilisation, its beginnings and its collapse. However, I have not so much time at my disposal as to sit and study the movements to and fro across Eurasia of the Germanic, Celtic, Balto-Slavic,

Italic, Hellenic and other tribes. But I feel certain that the movement from Saptasindhu northwestward through Iran can be demonstrated linguistically. In due course it may even be demonstrated archaeologically and anthropologically — except that the dating will be much older than indoeuropeanists like to think, probably closer to the Mesolithic period rather than the Chalcolithic one.

5. Eventually, Drinka resorts to Hock's figure of the isoglosses and his arguments which were presented at the beginning of this article, §1, namely that the isoglosses stand in a certain arrangement and in certain relationships, shown in the dialectological figure.

If India "were the Urheimat, then these relationships would have had to exist in India and would need to have been maintained as speakers passed through one of the 'bottle-neck' routes out of India, a very unlikely occurrence" (Drinka, 31). But Drinka considers this inadequate, since different branches could have moved out at different times and then came in contact with neighbours at a later time. However, she continues, we must take into account "the systematic, layered morphological correspondences of Greek and Indo-Iranian" which is part of "a stratified model of PIE" and which "cannot accommodate an Out-of-India explanation." For, if we posit an Indian origin for Indic languages, "how can we account both for the archaic morphological similarities which Sanskrit shares with many IE languages (e.g. a use of reduplication in the perfect) and those innovative features which it shares only with Iranian and Greek (e.g. a productive use of reduplication as an obligatory marker of the perfect)?" (p31).

(And here I would respond with two objections. One, how on earth does she term the reduplication for the perfect archaic, when neither Hittite nor Tocharian, the most archaic branches, according to her mainstream theory, have this? Let us be consistent please. Two, how on earth does she know

that the "productive use of reduplication for the perfect is an innovation and that the relics of the reduplicated perfect in Germanic" etc are not indicative of attrition and devolution from a richer archaic scheme like that of Greek and Sanskrit? See what DiGiovine writes in § 18,f, below.).

Having dismissed as unlikely the scenario of contact between Indo-Iranian and Greek "at a fairly late date" in order to account for the morphological changes that we know, Drinka finds the solution in the South Russian or Pontic Steppes. "A much more likely scenario would be to view Pre-Indo-Iranian and Pre-Greek as neighbours in the steppes themselves, as Anthony (2007)[6] does, and to regard them as late migrators. Contact linguistics thus provides crucial evidence for the migrationist hypothesis" (p7-32).

6. Contrary to the different opinion of other thinkers who held that the Earth moves (e.g. Plato: *Timaios* 40B-C), Aristotle made the Earth immovable and locked it in the centre of the universe surrounded by various spheres of supra-lunar celestial bodies. This arrangement, despite Aristarchos of Samos who, in the third cent BCE, held that the sun stood immobile at the centre while the other planets moved round it, prevailed, was perfected by Ptolemy in the second cent CE and became the established framework in astronomy until the 17th century. In 1543 Copernicus published his now famous *De Revolutionibus...* which placed the sun at the centre of the solar system. He was cautious enough to dedicate the book to the extremely liberal Pope Paul III admitting in his Preface that he might be wrong. Nonetheless, the book was placed on the Index in 1576 and thus the devout Catholics could no longer read it.

The savants of that period, churchmen and schoolmen, still liked to argue about the existence of general truths or their absence and other abstruse metaphysical points like the

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[6] Hereafter, Anthony and page number only.

Almighty's creation of the world from nothing (*creatio ex nihilo*), the nature of woman (whether animate or inanimate, *res* 'a thing') or about the number of angels that could sit on the point of a pin. Naturally, they did not want to be pushed out of the centre of the universe and their cosy Aristolelian-Ptolemaic planetary placement which gave them wealth and power for the promotion of knowledge in theological disputes as well as for the salvation of sinners, heretics and anticonformists to the received dogma, by burning or throttling them. So they repudiated all mathematical proofs in Copernicus and proceeded to develop new epicycles in the Ptolemaic system to counter those proofs. Note that an epicycle is a geometric model of some elegance used to explain the variations in speed and direction of the moon, the sun and the planets, the apparent *retrogade* motion of the planets and observable changes in the distances of the planets from Earth, which remained motionless at the centre of the revolving Ptolemaic spheres. Even the actual observations of Galileo with a telescope 80 years later would not make them change their minds: instead, they burned Giordano Bruno in Rome early in 1600, hounded Kepler who had provided the real, solid evidence for the actuality of the heliocentric model and who then lost job and income for several years, and confined Galileo until his death in a villa outside Florence. And the mainstreamers of those times continued to concot new refined models of epicycles!

7. I mention this affair because it furnishes such a clear parallel to what is happening today.

I presented Drinka's thoughts in some detail not only to refute her refutation of the indigenist thesis (and her refutation of my view in particular) but also to show how IEnist linguists use their own epicycles in constantly refining models and in modifying notions so that they may not have to remove from the centre of the IE scene the basic dogma that the Indo-

Iranians moved from the Steppes (or wherever) to Iran, whence the IAs moved southeast into Saptasindhu c1700. This is explicitly stated by an eminent linguist:

> "At some time in the second millennium BC... a band or bands of speakers of an Indo-European language, later to be called Sanskrit, entered India over the north west passes. This is our *linguistic doctrine* which has been held now for more than a century and a half. There seems to be no reason to distrust *the arguments* for it, in spite of the traditional Hindu ignorance of any such invasion." (M.B. Emeneau 1954: emphasis added)."

Note with what cocky assurance this distinguished linguist writes about **invasion** and the Hindu ignorance of it, when, it was he who suffered from ignorance, since, as archaeologists showed only 12 years later, there had never been an invasion.

Now, surely, Emeneau is writing about a historical event (the entry of bands of IE-speakers into India in the 2nd millenium) on which doubts have been cast. Any reasonable historian would be talking not about a *doctrine* and *arguments* but about facts, data, evidences. So a simpleton like me wonders why linguists write about historical events but do not adhere to the basic methods and canons of historiographers who would not pay much attention to linguistic arguments and models but would turn to the hard facts of archaeological and anthropological evidences. I wonder also why Drinka cites Huld's supercilious statement that

> "unless one is willing to become conversant with linguistic theory, one cannot meaningfully participate in a discussion on IE origins." (p29)

Surely, to start with, if linguists can intrude so rudely into the historians' domain and make such enormous blunders (like Emenau and his collagues), others should be allowed to intrude into the linguistic domain. But the more important point is that the subject of "IE origins" has nothing to do with linguistic theory. And Huld may be excused writing in

2002 but surely Drinka should know that other linguists take quite a different view of linguistic theory and historical linguistics. Here is one very clear and forceful statement published in 2003.

> "Too many comparative historical linguists want to dig up Troy, linguistically speaking. They consider it more important that comparative historical linguists shed light on prehistoric migrations than it shed light on the nature of language change [...] I do not consider comparative historical linguistics a branch of prehistory, and I sincerely believe that if we cared less about dates, maps and trees and more about language change, there'd be more real progress in that field." (Harrison, 2003:23.1)

I agree fully, of course. He might have added that not only do they make no real progress in their field which is somewhat messy but their interference has produced a large mess in Indology also.

Under the light of S.P. Harrison's remarks, I can't help making a comparison between Drinka's highly speculative article discussed in these pages and her excellent paper on the Periphrastic Perfect as developed in historical times in Europe (Drinka 2001): in this latter paper, she deals with concrete facts from welldocumented languages and shows how Greek develops this perfect first as passive (or intransitive), then active, and then Latin does something similar, and subsequently several other IE tongues — all these being well-attested late innovations.

8. Back to our epicycles and models.

Because, as Harrison says so succinctly, IE linguists do not do their job properly and because, as N Kazanas says, they do not push aside their doctrine on the IA entry, their theory, despite two hundred years of research and study, remains patchy and unsatisfactory, full of inconsistencies and contradictions. This state of affairs both in language-change and in protohistory requires constantly new hypotheses or modifications of old ones, which in turn demand fresh

revisions (and speculations) — fresh epicycles.

Take protohistory. In the 18th and early 19th centuries French first and then English savants declared that the caste system in India had been established after an invasion of Egyptions who, as conquerors with a priestly class, became the Brahmins and Kshatriyas while the natives became the two lower castes. (Some thought it was a Mesopotamian invasion). A few scholars like Langlois (1833) and Elphinstone (1841) were largely against this early Invasion Theory. Then, 1800-1850, came several linguists, and especially Max Müller, and thereafter we had the AIT (= Aryan Invasion Theory). So the AIT was not initially a linguistic theory but "sociological", we would say today, and it was based on nothing except sheer speculation. The linguistic theory was built around this.

In the 1920s archaeologists unearthed the first significant and unexpected pieces in urban construction and many artefacts of what was first named "Harappan" civilisation. In the decades following the 1939-45 war more startling discoveries were made. Now, any reasonable historian would have put one and one together and come up with 'two'. But not the linguists: they came up with 'three'! We know of the large Vedic literature and, while the *RV* (=*Rgveda*) itself shows no knowledge of conurbations, the post-rigvedic texts do speak of material constructions — walls, altars, houses —built with bricks. Here then was the civilisation of which the postrigvedic texts, especially *Yajur Veda* and *Brāhmaṇas* spoke extensively. And here was an advanced civilisation with writing on seals but supposedly without literature — a unique phenomenon! No, said the linguists who ruled the roost then — the Vedic people were ignorant barbaric nomads not related to the Harappan conurbations. So they proceeded to give an added twist to their dogma. The Vedics were IE people who destroyed the cities of the indigenous people, since, according to their (mis-) understanding of the *RV*, the hymns explicitly said that Indra and Agni etc destroyed various *purs*, which they (mis-)translated as 'forts, towns' — and continue to do so.

(*pur* incidentally means esoteric, occult. defence: Kazanas 2009, ch 4).

We had this version for decades. Then archaeologist G. Dales in 1966 showed that there had been no invasion, no destruction, no violence. Historians like A Basham accepted this early on, but not the linguists. Ten years and more afterwards, they continued to write about invasion and the enslavement or displacement of the natives (e.g. Burrow 1975; O'Flaherty (Doniger) 1981; Winn 1995). And then a new linguistic model appeared in the 1990s. No, agreed the linguists at last, it was not an invasion, it was a peaceful entry of IEs! Then, when archaeologists, Western as well as Indian, began to shout that there was not the slightest trace of an entry of a new people but the culture was developing entirely on its own, the linguists produced yet another epicycle: now it was waves of immigrants who had already adopted the indigenous culture or were so small that they left no mark. So now the linguists tell the archaeologists also how to do their job! Another epicycle has been produced by some Harvard professors regarding the genetic evidence which now unequivocally and firmly states that no genes flowed into India from the surrounding areas and especially north-west. They say that a very small number of immigrants **could** bring in the Indoaryan language without showing up in the chromosomes! (They, geneticists and linguists both, don't realise how ludicrous this notion is since very few immigrants must have had the supernatural powers found in fairy tales to aryanise an area as large as Saptasindhu).

The purely linguistic epicycles are well known to the linguists and we don't need to expatiate on the subject. One has only to read Lockwood (1969, 1972) or even Szemerényi (1996) and then Clackson (2007)[7] to see how much the theory changed; already Fortson (2004)[8] warns his readers to be cautious regarding some aspects in Szemerényi.

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[7] Hereafter, Clackson and page number only.
[8] Hereafter, Fortson and page number only.

Though by no means the first, B.W. Fortson provides the interesting epicycle concerning the division of the branches into *satem* (Sanskrit, Iranian, Armenian, Balto-Slavic) and *centum* (Greek, Italic, Celtic, Germanic, Hittite, Tocharian). Until recently it was thought that palatalisation in the *satem* branches was a useful isogloss but now, since the division is not so neat and has difficulties, it is said that each satem tongue developed palatalisation independently — only to generate new difficulties and complications!

9. Drinka's model of language-family tree, as descriptive of genetic relations, plus waves which include stratification of layers and areal contacts, is another such epicycle. Thus the cladogram becomes a three-dimensional model (pp21-22). With this model she expects to distinguish various morphological similarities (or isoglosses) representing an archaic linkage between the IE branches (e.g. iterative, intensive affixes and the like) from other similarities (or isoglosses) representing later innovations (e.g. the development of the imperfect).

However, as I said earlier (§4) it is wholly hypothetical and arbitrary in most cases to assert that a particular feature is archaic whereas another is an innovation. By using two more epicycles of entirely speculative and arbitrary chronological splits of the branches (pp24-25 one by Meid 1975 and another by Anthony 2007) she arrives at the conclusion that "the contact between Greek and Indo-Iranian implies that Greek did not move out of the central region until fairly late" (p25).

This is arbitrary not only because of the difficulty of sorting out archaisms and innovations but also because the date of the Greek's appearance in Greece can be c2200 or c3000+ (Coleman 2000; Mallory 2001) whereas Anthony gives the Greek departure from the central region c2500. This date accommodates the late entry of 2200 but certainly not the early one of 3000+.

It is arbitrary also because if Greek had stayed so long with Indo-Iranian in the central region after Balto-Slavic, which are *satem* branches, had left at c2800 (again according to Anthony) it should also have palatalisation and be a *satem* tongue like Balto-Slavic and Indo-Iranian. If it is claimed that Balto-Slavic and Indo-Iranian developed palatalisation independently (see §8 end, above), then obviously languages could just as easily develop independently other similarities and we need not ascribe these to contiguity and long contact.

I find Drinka's thesis and model totally unconvincing, as shown additionally by what follows.

10. On page 7 of Drinka's paper we find her presentation of the formation of the imperfect of the Sanskrit dhātu √*kr* 'doing, making', given in the 1st sing 'I was doing/making' – *a-krnav-am*: here *a-* is the augment, *-krnav-* is the present stem (when conjugated as 5th class) and *–am* is the 1st person sing. termination of the secondary endings:

Imperfect :   *akrnavam*
          a–   *krnav-*   am
          aug + pres stem + sec ending
          (*kr* + *n-* infix).

However, there is something bizarre in the analysis of the present stem as "*kr* + *n*-infix." The present stem of the 5th class conjugation does not take an infix –n- (the *n* is due to the influence of *r*) but two affixes: *no* for the strong persons (the three of the Singular) and *nu* for the weak ones (all the others); the same applies to the formation of the Imperfect. So the analytical description is incorrect.

Here I wonder at the ease with which our scholar writes about archaic layers and root forms, about infixes and suffixes, about present stems and thematic aorists and about stratified temporal and aspectual categories, much of which is speculative and dealing with pre-historic aspects not known, yet does not seem to know basic elements of Sanskrit grammar, namely that the particle is not *–n* but *nu/no* and it is

an affix and not an infix (the way −n is an infix in dhātus of class 7, like √ yuj > yu-n-j-mas 'we join/yoke'). Also, the Aorist a-kar-am (Drinka, 7) is a form of the root Aorist of kṛ conjugated as class 2, not 5 (or 8). In Sanskrit one dhātu could be and often was conjugated in two and more classes.

I also wonder how she can be so certain that the Imperfect is built on and after the Aorist since the stem (kṛ-) is the same as the Present whereas the Aorist stem undergoes ablaut with the guṇa (= strong) form −ar of the root vowel ṛ but conjugated as class 2! It would seem to me more natural to retain the same stem and differentiate with terminations and augments rather than with changes in the stem as well. I am afraid her analytical description is both superficial and wrong.

Here I must take leave of Drinka and her model of speculative stratifications. Neither her model nor the isoglosses support her Steppe thesis.

11. Hock was by no means the first to use the isoglosses as tools of protohistoric research to reach the PIE homeland.

I am taking as another example S.M.M. Winn who unwittingly displays the usual blunders, oversights or deliberate misrepresentations in the mainstream thinking on this subject. He writes:

> "Celtic, Italic, Hittite, Tocharian and (probably) Phrygian share an interesting isogloss: the use of "r" to indicate the passive forms of verbs. This feature, which does not occur in any other IE language, is probably an example of the 'archaism of the fringe phenomenon' " (Winn, 324).

The first thing to note here is that the forms of the verb are those of the Middle Voice or of the medio-passive, as specialists say. The second is that Sanskrit has an obvious trace of this in the 3rd Pl perfect (e.g. tu-tud-re 'they (have been) struck' or 'they (have) struck for themselves'). Nobody can aver with certitude that this feature, as exhibited in Celtic, Italic etc, is archaic. We can just as arbitrarily claim that the −re

ending in the Sanskrit perfect is the initial archaic element and the other branches' developments are innovations!

However, what is much more interesting is the "fringe". Now, Celtic is the western fringe (in Ireland even though some might invoke Germanic on Iceland); Tocharian is certainly the eastern fringe on the north side. But there is arguably nothing "fringe"-like about Hittite (on the north-eastern quarter of Turkey) nor Italic, since both Spain (Celtic) and Greece and Cyprus (Greek) are more southern. However, accepting this, we cannot but see, of course, that Sanskrit is "fringe" at the south-east corner of the IE greater spread (with Tocharian at the north-east corner). So this "fringe" phenomenon is quite imaginary — as the map shows.

Figure 5.

Here however enter two banes of IE theory — selectivity and circuitous thinking. For while IE linguists accept, say, Hittite and Celtic at their historical habitats, they do not accept Indo-Iranian. They invariably place it in the "centre" because it is the only way they can prop their assumptions and theories. Here is an example: "We are accustomed to thinking of Indo-Iranian as the far southeastern corner of the [IE] speech area, but it is abundantly clear that Indo-Iranian spread east (and

later south) from the Eurasian [=Pontic] steppe" (Ringe 2004:1122). How is this "abundantly clear"? Ignoring the glaring fact that ALL branches were, like IIr, at the centre at some time (!), they prevaricate with "Oh, but the general Theory says so because of isoglosses, loanwords and innovations." And how do we know that innovations *are* innovations etc? "Oh, because Hittite with its simple verb system and other archaisms was the first to move away from the Steppe and occupies a peripheral corner." And so on, round and round the mulberry bush. The fact that the Hittites could not have been present in northeast Anatolia much before 2000 whereas the Greek speakers could have been present in Greece before 3000 — as archaeologists and historians tell us — makes no difference to IE linguists. They must preserve the Theory. So, while Celtic and Slavic are placed in their historical habitats, even though we know for certain, they moved constantly to and fro, yet Iranian and Indoaryan are not, because this "is abundantly clear"! This is not scholarship but double-thinking if not plain duplicity or self-deception.

Anyway, Winn seems to take this core-and-peripheral division to heart for he serves it to us in slightly different terms further down, when he writes about palatalisation:

> "Looking at the geographical distribution of this isogloss, we may note its absence from the peripheral languages: Germanic (at the northwest limit of IE ...); Celtic (western limit); Italic, Greek and Hittite (southern limit) and Tocharian (eastern limit). It is the languages at the center that have changed. Here at the core, a trend towards palatalisation started; then gradually spread outward. It never reached far enough to have any effect on the outlying languages" (Winn 326).

One wonders whether there is something wrong with the thinking and seeing of this scholar, because, when one looks at the map, one sees at once that neither Saptasindhu at the southeast fringe nor the Baltic position in the north are in any conceivable way "core": both are very peripheral, especially India. So what is this writer saying or implying?... Nothing. This is a classic case of ignorance. For the man deliberately

ignores significant parts of the map before his very eyes and indulges in some imaginary theory. It is, unfortunately, on such instances of deliberate ignorance that the AIT has been established in its entirety (— "there *was* an invasion even if the Hindus were ignorant of it!"). Nor do IEnists take sufficiently into account the facts around Modern English. At the core, i.e. the United Kingdom, very little change is observed, and that change is due to the large influx of people speaking foreign tongues (former Afro-Asian colonies) whereas at peripheral regions (U.S.A, Australia etc) there are changes in pronunciation, spelling, syntax and semantics.

The plain fact is that nobody knows when, where and how palatalisation started and spread — if, indeed, it started and spread as the received theory teaches. (Some claim that *satem* is a one-way process: velars become palatals. Yes, perhaps so. BUT in Modern Greek we observe an odd trend. The word "*schoini*" 'rope', has moved to palatalisation in Cyprus being pronounced "*shini*" but in Greece itself the spirant *–ch-* (=*h*) has become *k* and so we have 'velarisation': we say and write *skoini* (the *–oi-* is pronounced as *–i-*). So also others with the same conjunct *–sch-* like *áschēmos* 'ugly' etc. But see also Avestan **h* becoming *xᵛ* (= *ḫᵛ* = *khᵛ*) as in *xᵛafna* 'sleep' (cf Vedic *svapna*) or *Haraxᵛa�miti* (cf *Saravaitī*). So, never say never!

12. S. Talageri attempted to show that, in fact, the isoglosses can, as they stand, be accommodated by the Out-of-India Theory (2000:266-282). I gather that he repeated this exercise much more seriously recently (2008) but I have not seen this. I too got carried away and dealt with this matter briefly and superficially because I considered it inconclusive and therefore irrelevant — and very tedious (2002). Nobody paid the slightest attention, as expected.

A little later, taking as his starting point Hock's study of 1999, mentioned in §1 above, K. Elst wrote a paper dealing in greater detail and depth with the same subject (2005). One of

his more interesting statements is that "Communities in truly close interaction, at whichever stage of the development of IE, would also develop isoglosses" (p246), i.e. even in late and recent periods. He then cites a passage from Hock (1999:14) where the eminent comparativist "himself *unwittingly* gives at least one example which doesn't easily admit of a different explanation" (my emphasis). Hock's passage reads: "The same group of dialects [Germanic, Baltic, Slavic] also has merged the genitive and ablative cases into a single 'genitive' case. But within the group, Germanic and Old Prussian agree on generalising the old genitive form (...) while Lithu-Latvian and Slavic favour the old ablative" (square brackets and dots are Elst's). Then Elst points out that Old Prussian, though essentially a member of the Baltic family, shared this isogloss of the genitive with Germanic since it was very close to the Germans while Lithu-Latvian shared the isogloss of the ablative with Slavonic because it was in close contact with that. So these are comparatively recent phenomena that can be easily diagnosed and, of course conflation of cases (and other innovations, I would add) continue to occur even in recent history." Then Elst concludes that "the isoglosses discussed by him [i.e. Hock] do not necessitate the near-identity of the directional distribution pattern of the PIE dialects with that of their present-day daughter languages" and so the Indocentric hypothesis is not threatened by Hock's arguments (Elst 2005:246).

Elst's paper too received little notice beyond the rather contemptuous remarks of S. Jamison who wrote a review for the *Journal of IE Studies* (2006) of the book in which it appeared (Bryant & Patton, eds, 2005).

13. Elst might have pointed out several other faults in Hock's scheme.

For instance, Hock says that one entry through the mountain passes down into India is easier and simpler than one highly compressed exit or many out of the subcontinent.

But, surely, this difficulty — one into, rather than many out of — applies to all proposed homelands. Even the Steppes have a rough terrain with their tundras, rivers and mountains. Then, Hock himself has repeatedly stressed the fact that in historical times four languages of IA origin left N-W India. One was that of the Gypsy emigration in the early centuries CE (Fraser 1995) which cut right through Europe reaching Britain. The other was Gandhari Prakrit spreading into medieval Khotan and farther east. The other two are Parya as found in modern Uzbekistan and "Dumaki (close to present day Shina)... to the outer northwestern edge of South Asia" (Hock 1996:82 and 1999). So the same could have happened in the remote millennia BCE and the IE branches could have left from Saptasindhu. And let me here reiterate that I consider Sanskrit (or Old Indic) also to be a language that devolved from PIE. Furthermore the larger Vedic area (figures 2 and 3) shows that languages (and people) left from Bactria!

But the most important fault lies in his partial (perhaps deliberate?) selection of isoglosses. Does he play foul? Well, this is suggested by his exclusion of the Tocharian branch with the severely lame excuse that "it is difficult to find dialectal affiliation" (1999:16). How can a linguist of Hock's calibre say such a thing when all books on IE linguistics (like Winn's 1995 publication, cited earlier in §11) mention the isogloss of −r- marking the mediopassives in Celtic, Italic, Hittite and, perhaps, Phrygian and, of course, Tocharian (e.g. G&I, ch7; Szemerényi, 242; etc). Moreover, Tocharian has the mediopassive present participle with endings −mane/-mām in common with Sanskrit −māna, Greek −meno- etc, and the -a- subjunctive (Winter 1990:165), also found in Italic, etc: the subjunctive is totally absent and the participle very doubtfully present in Hittite.

So we must wonder why Hock wanted to exclude or push aside Tocharian.

According to the AIT scenario which is the IE Theory with the Steppe as the homeland, if, according to Anthony (2007) whom Drinka cites, Hittite (=Anatolian) left c4200, then Tocharian left c3700 and Italic and Celtic c3000, all in this

model which, Drinka says, "integrates archaeological and linguistic data, evidence of ancient linguistic and cultural contacts" [= 'interchanges' is meant, presumably]. But then, when and where did the speakers of Tocharian (far east), Hittite (centre, south), Italic (west & south) and Celtic (far west) meet and mingle to innovate or perhaps reinforce and preserve this isogloss -r- of the mediopassive which is virtually unknown to the other branches?

First of all the dates do not favour such a happy cohabitation. There are differences of 500 and 700 years during which much else could have happened. But, more important, the German-speakers moved out at 3300 after the Tocharians (at 3700) and before the Italo-Celts at 3000, yet Germanic is not graced with this isogloss. But Germanic moved in the same direction as perhaps Hittite did for a time and as Italic and Celtic certainly did for much much longer. Then, the Steppe is not so far from the north-western part of Anatolia where Hittite emerges in historical times at about 1900. So where was it wondering for over two millennia?

But then again, where was this area of cohabitation or close contiguity for Tocharian moving eastward, for Hittite moving west and south through the Balkans and eastward (or east and south over the Caucasian mountains) and Italic and Celtic moving westward and then Italic moving southward while Celtic wandered back and forth even as far east, in historical times, as the former Hittite (=Anatolian) region in Asia Minor (=Turkey, Anatolia). The north must be excluded since such a location would not have favoured at all Anatolian (or Hittite) temporally or geographically. The south is difficult because there lies the Black Sea and the Caucasus. If the location is in the southwest, which is the northern Balkans then Tocharian is in great difficulty having to retrace its steps in order to arrive in time at its destination in Central Asia! But the other two also face the problem of Germanic moving westward. An eastern location would create difficulties for Italic and Celtic which would have to return very hastily to reach their own final habitats.

Even if we do not follow Drinka in adopting the Anthony chronology which is patently unworkable, a location for the common cohabitation or close contact for the many centuries needed to establish this isogloss (and perhaps others) is obviously fraught with more difficulties than having all dialects spilling out of the larger Saptasindhu (and Bactria). I suspect, Hock realised the difficulties and for this reason chose to push aside Tocharian.

But I have beaten about the bush long enough. Let me now justify the title and take a good, long, detailed look at the isoglosses.

Thus far, at any rate, my examination of the very partial evidence of isoglosses offered by all these linguists and despite their selectivity, their circuitous arguments and their deliberate ignorance, shows that the Steppe is an impossible urheimat.

14. Isoglosses. (Hereafter they shall be marked i, ii etc.) The pair of Russian linguists, Gamkrelidje and Ivanov, inform their readers that isogloss **(i)** feminines in ***-ā, *-ī, *-ū** were developed in PIE after Anatolian (with Hittite as its chief representative) left the homeland. Since Anatolian has no feminines and since it is considered also by these two linguists more archaic than any other branch, then such feminines must be an innovation at the secondary stage of PIE.

Except that, according to the two Russians(!), Hittite did not move very far, if it moved at all, though some Anatolian dialects certainly spread westward. The Russian linguists do not favour the Pontic Steppe. They regard the Steppe as a secondary homeland (whereby the Corded Ware region becomes a tertiary resting stage). Citing almost exclusively linguistic evidence, the two Russians propose as primary homeland the Transcaucasian area — i.e. what is today Armenia, eastern Turkey (=Anatolia), northern Iran and upper Iraq.

It is extraordinary and astonishing that learned linguists facing the very same general linguistic data and using the

laws, procedures and tools of analysis of the selfsame "science" arrive at such disparate results in determining the PIE urheimat — from the Baltic to the Balkans and to Bactria! Thus the authoritative sanskritist T. Barrow favoured central Europe (1973:9) and the dispersal c 3000; Gamkrelidze and Ivanov offer us Transcaucasia (1955, 1990, 1985) and 3000; I. Diakonov favours the Balkans (1985); the Indian indoeuropeanist S. Misra posits N-W India and derives dates within the 6th millennium (1992; see also 2005); G. Owen believes Minoan to be the first IE language, the Greeks indigenous and the Aegean the cradle of PIE (1999); others favour, of course, the Steppe (Mallory generally; Hock 1999; Anthony 2007; et al); Johanna Nichols stretches eastward to Bactria (1997-8).

Examining summarily some of these conflicting "estimates" J. Mallory cries out "Will the 'real' linguist please stand up!" (1997:98). But also, these conflicting results show clearly S. Harrison's view that comparative linguistics is not "a branch of prehistory". Seeing the messy disagreements regarding the urheimat, together with Harrison, I beseech linguists to leave (proto-)history to (proto)historians and simply offer the data and evidences of their studies without ludicrous claims and guidelines to others.

15. Since Hittite does not have isogloss **(i)** feminines in -ā, -ī, **and** -ū, say the two Russian and other linguists, these are a form of innovation in the branches that do have them and have them richly (especially Sanskrit). So here we enter again this circular game.

I have not yet seen someone arguing that isogloss **(ii)** the words for brother, daughter, father, husband (S *pati*, Gk *posis*, L *potis* etc, and Ht -*pat* 'just'), mother, sister, son and wife (S *patnī*, Gk *potnia*, B -*patnī*) are also an innovation after Hittite left, since Hittite does not have them. For the IE stems of all these words is found in all branches even if only three or four in some of them. These are the closest possible relations within any human community. If they are innovations, then perhaps

some linguist expert can offer an explanation why PIE, upon the departure or separation of Anatolian, suddenly decided to abandon its old terms and, throughout the length and breadth of the community, invented these new terms — eight of them.

But, really, the same applies to feminines. Mature and serious scholars claim that the the IEs, after the separation of the Anatolians, decided to "innovate" introducing the feminine gender into their speech without realising how unrealistic might be such a proposal. Following others, B. Fortson attempts to explain away this event by invoking two (hypothetical) suffixes formed with the (hypothetical) laryngeal h_2 (or H_2) in the (hypothetical) PIE which, eventually, more or less by chance (in a neo-darwinian linguistic evolution), became the feminine ending (pp 118,156). This is as unreasonable as it is unconvincing. For we are not talking about *one* feminine termination. Surely, it is stretching this hypothetical process beyond all credibility to claim that h_2 became *three* endings. Why three? ... And, if you consider Sanskrit (and Avestan and Greek) with several more stems in short vowels and consonants (e.g. S *bhūti*, Gk *phusis*, Celt *buith* 'be', Lith *butis*, Sl *bytb* etc generally 'being'; *nak-t-* Gk *nuk-t-*, L *noc-t-*, Lith *nakt-*, Hit *nek-ut-*, Old Sl *nostb* [with its palatal] 'night' ; *pad*, Gk *pod-*, etc; *vāc*, L *vox* etc, etc) -why so many?... Are all these accidental outcomes? Let us be reasonable!

I find the received thinking on this matter very defective. If the feminine gender arose as an innovation, there should have been a very compelling reason, perhaps of the nature of near immediate life or death; for we know quite well that Ancient Egyptian and modern French, both highly sophisticated and productive of extensive, fine literature (poetry as well as prose), function extremely well with only two genders while English, with its excellent poetry and prose and now a world common language, functions with one gender. And there are many more functioning with only one gender or two. Furthermore, in the 3500 years of the recorded history of IE no

branch developed towards greater complexity; on the contrary, with the exception of Sanskrit which "froze" thanks to Pāṇini's grammar, they all changed to simpler morphological categories by attrition, analogy, the introduction of various auxiliaries and the like. Even Hittite shows clearly this devolution or process of reduction into simplification. Many IEnists have shown that it had sufficient traces of the dual, which had otherwise disappeared (Watkins 1986: 60; Szemerényi 1996: 160-161; et al). The instrumental and ablative plural, which appeared in Old Hittite very rarely, later disappeared altogether as did the directive (Luraghi 2006, 177-178; Fortson, 164-165). Note that the abl. ending -*az*, seen also in the pronouns, in sing. and pl., is much like the Sanskrit -*as*, sing (alleged PIE *-es*). The (medio-)passive participle in *māna/meno* is found only in names in weakened or syncopated form (Szemerényi, 320-321). So again let us be reasonable!

It would be more correct to say, therefore, that Hittite lost not only the dual and some declensional cases but also the feminine gender, as has happened in English. Indeed, many expert hittitologists state that the feminine did exist but disappeared in course of time; and some claim to have detected traces of it in the extant twogender language (Melchert 1994; Puhvel 1991; Weitenberg 1987).

The same should be said of two more isoglosses which the Russian linguists term 'innovations' and ascribe them to the alleged post-Hittite developments in the PIE language. One is isogloss **(iii),** the instr pl ending of the thematic masculine as in Sanskrit *dev-ais* (alleged PIE *-ois*); the other is isogloss **(iv),** the demonstrative pronoun as the Sanskrit (m) *sa/so,* (f) *sā* and (n) *tad* (alleged PIE *so, *sa, *tod/tho*). These also were present in PIE, it would be more reasonable to say, but disappeared from Hittite along with other morphological features and the lexemes for 'brother, daughter, father, husband, mother, sister, son, wife'.

In the preceding discussion we find also nothing to indicate, let alone prove, that the Steppe, or the two Russians' Transcaucasian area, was the PIE homeland.

Let us use an analogy. In the Iranian languages we find that in Old Persian the cases are only six while dative and genitive are one as instrumental and ablative are one. But Khotanese has gone much further having only remnants of the neuter gender and the dual number (Sims-Williams 2006: 139-140). Because we have the attestation of Avestan in full, no scholar claims that Khotanese, being simpler, is more archaic than Old Persian.

16. Since we have mentioned the laryngeals several times and since we meet them constantly in all the IE publications, I feel I ought to cast a look at them, however briefly. They are wholly unattested in all IE branches except Hittite, a language whose IE character is much eroded, and contaminated, even smothered, by its neighbouring tongues, some of which are rich in laryngeals. Personally I doubt very much the existence of these sounds in PIE. It has become fashionable to introduce them at every turn of the discussion, otherwise the linguist would be considered ignorant and could not hope to belong to the club of the elite. In the first half of the 19th cent nobody suspected the existence of these laryngeals, that like the jokers in card-games can fill any position; now it is the rage to find "reflexes" of them just about anywhere.

Let us consider the example of H_2 (or h_2 or ∂_2). This appears in PIE *$dhugH_2ter$ 'daughter' (Fortson 2004: 204): it appears as *a* in Gk *thugatēr*, but as *i* in S *duhitar*. However, Av *duYðar* (Hale 2004: 748) or *duxtar* (Fortson, 204) has neither *a* nor *i*. So what was the form in Proto-Indo-Iranian?... Not known. Old Avestan has *pta* for 'father' but later *patar* and *pitar* (Mayerhofer *KEWA*, vol 2, 277); this is S *pitṛ*, Gk *patēr* and L *pater* (Fortson, 23, 276) all allegedly from PIE *pH_2ter. But, again, what was the from in Proto-Indo-Iranian?...Unknown. First of all consider that unlike S (which

has many cognates from √*duh*), Av *duYðar* and Gk *thugater* stand isolated without related stems in their languages. Then, as M. Hale observed, the *i* was not an invariable feature of Proto-Indo-Iranian (2004: 748). The cognates for 'father' expose yet another inconsistency. L has also *Ju[s]pitar* with *i* as well as *pater* in the selfsame phonetic environment and Fortson offers no explanation at all (2004: 23, 33, 253, 261). There is also *Marspitār* (Fortson again offers no explanation: 276, 406). A further difficulty sprouts out from S *pitṛ*. We mentioned already that Av has *pta, pitar* and *patar*, despite the selfsame phonetic environment. But according to IEnists S should have *phitṛ! Because according to the IE reconstruction-system, the laryngeal H2 becomes *i* in S but also aspirates the previous consonants. Thus PIE *stH₂to > S *sthita* 'one who has stood' and PIE **pletH₂-* > S *prathiman* 'width'. However, *pitṛ* has no aspirate *ph*! What is more important and very funny, in this case S has *i* while others have *a*, yet, it is repeatedly broadcast, Sanskrit has levelled out into *a* the vowels *e* and *o*! These disparate phenomena show most flagrantly that these IE "reconstructions" and "phonetic laws" are anything but satisfactory.

Obviously it is very nice to have at one's disposal two, three, or as many such highly adaptable entities as one likes, and use them to fill gaps or generate morphemes that suit one's "reconstructions". Language change is inevitable but it has been neither regular nor uniform since, sometimes even in the selfsame linguistic/phonetic environment, unknown forces interfere. Consequently it is useful to have these entities to prop up "laws" that, in fact, are not laws and perpetuate the myth of regularity and uniformity. The laryngeals belong thus to the category of epicycles.

Criticizing Rix's *Lexikon...* (1998) for not being rigorous enough and giving unwarranted flexibility to finding matches and cognations with the (non-existent) laryngeals, Angela Marcantonio comments: "it may be very difficult, if not impossible, to falsify the IE theory, since one can always

bridge the gaps between the predictions of the model and the actual data through ad-hoc explanations that will then be granted the status of a (more or less) general principle" (2009: 33). Marcantonio does not use the word 'epicycle' but that is exactly what she is referring to. Nonetheless, sooner or later the epicycles produce too much complication and confusion.

17. More isoglosses

There is one popular division of the IE branches into two distinct groups (e.g. Drinka 7-8, 25, 32,; Kazanas 2009c : 59; etc): (A) Hittite, Tocharian, Italic, Germanic, Baltic and Slavic; (B) Indoaryan, Iranian, Armenian, (Thraco-)Phrygian and Greek. (I leave out Albanian or Illyrian and Mycenaean and the Anatolian branches, since they yield negligible material for our purposes.)

v. Group B has one isogloss in common and exclusively of all the branches in group A. This is the augment in some past tenses — **a-** in Sanskrit, **e-** in Greek etc. These languages do have other isoglosses in common but they share them also with languages in group A. Armenian has this augment too (only with monosyllabic stems); to a small extent Iranian also. Thus this isogloss lends some support to the illusion of the existence of a close group B. However, this shared isogloss proves nothing since we have also the division of *satem-centum*. I refer, of course, to the next one. Moreover, both Greek and Sanskrit have also non-augmented aorists! Needless to say this is ignored by IEnists.

vi. Palatalization introduces anomalies to many groupings. The *satem-centum* division cuts across many other neat isogloss-groupings. *satem* branches are Indo-Iranian, Armenian and Balto-Slavic. *centum* are Tocharian, Hittite, Greek, Italic, Celtic and Germanic — a division that shatters the grouping (A) and (B). So in **isogloss (v)** we find Greek (*centum*) against the others (*satem*). To say, as some do (e.g. Winn 324: see § 11, above) that palatalization (*satem*) did not spread in the periphery is to ignore the position of Baltic and

Iranian (please see Map in § 11) and to say that Iranian and Indic must have been at the centre (and not at the fringe) is to use a dishonest and circuitous argument — and it is dishonest because this applies to all branches (all at the centre), since they all were at one time a unified tongue, and because other branches are examined at the locus where they first appear in historical times. Equally dishonest is to say that it arose late and independently in the branches that have it, because then the same claim could be made of any other isogloss!

However, there is also the oddity of Luvian which is an Anatolian branch, mostly south of Hittite, which has morphological peculiarities and some striking differences from Hittite (Fortson, 168-170). One of its most striking peculiarities is the fact that it is not *centum* even though it lies in the very heartland of *centum* languages: its velars became affricate *z* and sibilant *s*. Note also that while Luvian has the verb conjugation in -*mi* in common with Hittite (and Sanskrit and Greek), it also has one in *ni* (< allegedly IE *-ō) which is not found in Hittite (Fortson, 170; Szemerényi 246).

So Luvian's position and features present a major difficulty and its differences cry out for explanations that are not at present forthcoming.

vii. The ending of the genitive singular as in Sanskrit -*(a)sya* (alleged IE *-(o)syo) appears in Greek as -*oio* and Armenian as -*oy*. So Gamkrelidze and Ivanov give this isogloss only to the branches of group B. But they are wrong in that they omit the endings -*is/oso* in Gothic and other Germanic dialects; the -*osio* in Latin and other Italic dialects. Even the Hieroglyphic Hittite genitive in -*asi* and Luvian adjective in - *assi*- is given by Szemerényi and others (Szemerényi, 183-4, 187) as related to *- (o)syo. (Note that Clackson p 97, Fortson p 117, Watkins 2004, p 561, glide over this matter without giving many details!)

viii. Hock highlights the interesting changes of original *tt. This turns into *ss* in Italic, Germanic and Celtic; into *st* in Baltic, Slavic, Greek and Iranian and into *tst* in Hittite.

Strangely it appears as (>*tst >) tt in Sanskrit (Hock 1999: 15-16; Fortson 63; etc). I put the (>*tst>) for Sanskrit in brackets because I find the various analytical explanations not at all convincing (Fortson, 63; Szemerényi 103-104): ut-tha (<ut-stha) 'arising' does indicate a loss of -s- but (a) this is quite different from nṛt-yati 'dances' giving nṛt-ta 'what was/has been danced'! (b) Other branches do not have dhātus 'roots, seedforms': e.g. √ nṛt, √ mad etc as such (Avestan approaches slightly the Sanskrit situation), but only stems: to cite Greek á-(F)ι6τοs 'unknown' as if there was in Greek some root *F it- or Latin vīsus (<*vis-sus < *vid-sus) 'seen, known' as if there was, again, a Latin root *vid, when the present stem was vide- and elsewhere vid- , proves nothing beyond the simple fact that these languages had lost their dhātus and functioned with ready-made forms that had suffered much attrition. Then, that dehi imperative 'do thou give' (< da-dā-ti 'gives') came from *da-z-dhi (parallel to dazdi) is mere speculation since the actual form is de-hi not de-/dă-dhi, in parallel with brū-hi 'speak!', kṛ-ṇu-hi 'make, do!' as distinct from vid-dhi 'know!' or ru-n-(d)dhi 'obstruct!'. Behind this thinking is the AIT and the alleged common Indo-Iranian trekking from the Steppe down to south-eastern Iran.

However, for argument's sake let us accept that Sanskrit, like other branches, started as *t-t, changed to *t-s-t then back to tt! The fact remains that here **we have an isogloss that cuts right across groups A and B and groups *satem* and *centum* and so tears to shreds any attempt at neat grouping.** There are more such isoglosses.

ix. The sigmatic future (e.g. S dā-syati '(s)he will give'; Gk σω-σεω; etc) appears in Sanskrit, Greek, Latin (not fully), Celtic and Baltic and has the same effect as (ii). There are differentiations, as Szemerényi points out (pp 285-287), but the fact remains that they all have -s-. To say that there was no future in PIE as Clackson does following others (p 119), because there is no exact matching of forms or because Hittite and Germanic do not have this, is again speculative, defective

thinking. In any case, this isogloss whether primary or secondary, also cuts across both groups A and B and *satem* and *centum*.

x. A similar effect is produced by the isogloss of the reduplicated perfect, found in Sanskrit, Greek, Latin (fused with aorist), Celtic and Germanic (e.g. S *da-darś-a*, Av *dadarᵊsa*, G δε-δορκ-α 'have seen'; L *cu-curri* 'have run'; Gth *stai-stant* 'struck').

Thus we have Celtic, Germanic and Italic from group A; Greek and Sanskrit from B. Then, we have Sanskrit and Avestan from *satem* and all the others from *centum*.

xi. A. Lubotsky points out (2001: 302) that Germanic, Baltic, Slavic and Iranian lost the aspiration of the voiced aspirates (e.g. *dh* > *d*, *bh* > *b* etc). However **all** branches lost the voiced aspirates except Sanskrit. Thus Greek turned them into unvoiced as in S *bhar-* and G φερ- (*bh/ph*) and Latin into labiodental *f* as in *fer-*. (Cf S √*bhṛ* 'bearing, supporting', √*dhā* 'putting', √*ghas* 'eating' etc.)

xii. Original **s* in CV[9], VCV and some other positions became a spirant or *h* (or was lost) in Greek, Phrygian, Armenian and Iranian. Cf S *sarva*, Av *haᵘrva*; Gk *holo-*, C (*h*)*uile* 'all, whole'; S *dāsa* 'demon, servant', Av *dāha-* and Gk δααι 'strange, barbaric people'. This isogloss also cuts right across the fashionable groupings.

Since Sanskrit retained the original phoneme in these cases, surely this indicates that Iranian moved away from Indoaryan, not the other way round as the mainstream AIT has it.

xiii. A rather bizarre isogloss is that of the Middle present participle in **-mo* (G&I, 345; Szemerényi 320-321; Fortson, 97-98) found in Baltic and Anatolian. It is bizarre because Baltic is *satem* while Hittite is *centum* and the two are separated by Thraco-phrygian, Slavic and Germanic. How and where on earth did these two branches, Anatolian and Baltic

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[9] C=Consonant; V=Vowel

find themselves together to the exclusion of the other branches and long enough to develop this unique feature?

These facts, linguistic and geographic, perhaps make Gamkrelidge and Ivanov suggest that this was an independent development — thus applying the convenient selectivity epicycle since the common thinking of "grouping" fails here. But, of course, if this isogloss developed independently, why not others? (See also **vi** above.)

xiv. Another bizarre isogloss is the subjunctive with -$\bar{a}$- (G & I, 344) shared by Tocharian (far east) and Italic (middle south), in both of which it functions as future, and Celtic (far West). Whenever Tocharian and Celtic or Italic or Germanic or Baltic share an isogloss, it is very difficult to envisage common cohabitation or close contact for long since we have two opposite directions of movement from the putative homeland at the Steppe (or Armenia!).

But the matter of subjunctive is more complicated since subjunctives and optatives were formed directly with the verbal roots and not derived stems; Sanskrit also participates in this (Clackson, 136), although it has the moods with derived stems as well and, of course, verbs have -$\bar{a}$- as subjunctive marker before endings. Therefore Sanskrit can be said to share the subjunctive isogloss with Tocharian etc.

xv. The two Russians also give the modal forms in -*l* which we find in Tocharian, Armenian, Anatolian and Slavic (see also Fortson, 98). Here again we see two opposite directions with Tocharian eastward and Slavic westward. This also cuts across groups and presents the same difficulty as **xiv** and **xvi**, the next one.

xvi. This is the the medio-passive marker -*r*- which we examined in §13, earlier. As we saw this is shared by Tocharian, Hittite, probably Phrygian, Italic and Celtic. This does give support to the illusion of the group A and *centum* (although Germanic is missing), but, on the other hand, the Balto-Slavic (*satem*) is also missing while Phrygian (from group B) intrudes. However, the most important feature here is

the directions in which the languages moved as in **xiv** and **xv**; also, Greek and Slavic are missing though interposed between the eastern branches (Tocharian, Anatolian) and the western ones (Italic, Celtic).

xvii. The isogloss -*su*/-*si* of the locative plural appears in Sanskrit, Iranian, Greek (dat/instr/loc in -*si*), Baltic (-*ose*) and Slavic; but it is possible that Latin -*is* could derive by apokope from *-*isi* or *-*isu*. Anyway this isogloss also cuts across the two groupings. The two Russians consider it an innovation. Why not? If it does not fit the Theory, it is an independent development and/or an innovation.

xviii. The prohibitive (or inhibitive)[10] *mā/mē/mi* is found in Tocharian, Sanskrit, Avestan, Armenian and Greek; it is an isogloss that again cuts across groupings and provides a ponderous puzzle. The other branches have instead *na/ni* (and *ne* Clackson, 162-3). Hittite (alone from the Anatolian sub-branch) has *le*.

This *le* looks very like the Akkadian negative *lā* (and Old Assyrian 2000-1500 BCE: see Huchnergard and Woods 2004: 219, 261) and the Hebrew *lō* 'not' (McCarter, 2004:358) or the Ugaritic *lā/al*, 'no/not' (Pardee 2004:309). This may be indicative of how Hittite in general lost many features of PIE and acquired characteristics from the surrounding languages.

Here again Sanskrit reveals its special status. It has *ná* for simple negative statements: e.g. *yathā **ná** hṛṇīṣé **ná** hámsi* 'in that ... thou art not angry [and] do-not slay' (*RV* 2.33.15). It also has *mā* + injunctive for prohibitions: e.g. **mā** *naḥ súryasya ... yuyothāḥ* 'do-not thou-sever us ... from-the-sun' (*RV* 2.33.1). But it also has *ná* +injunctive in negations with future or absolutive sense: e.g. *yám ādítya abhi druhó rakṣathā, nem [=ná+im] aghám naśat* 'O Ādityas, whom you protect from harm, him distress shall/should not/never reach' (*RV* 8.47.1). This last construction has the sense of prohibition

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[10] Prohibition has force for all times, and, of course, before the action starts. Inhibition occurs when the negative comand/direction stops an ongoing action.

too: 'let not distress ever reach him'. There is another construction with the subjunctive but we need not go further. With this last example, we can speculate that PIE had all these syntactical tools, and more. After the dispersal, some branches retained *mā* for prohibitions and other *na* (or their protoform). Sanskrit, as so often, retained both *na* and *mā*.

xix. The accent provides yet another interesting isogloss. Free-moving accent from stem to different parts of the stem or to ending is observable in Sanskrit, (Avestan?), Greek, Slavic and Baltic. All the others have a fixed or bound accent. Andersen is, of course, correct in saying that the *satem-centum* line and free-fixed accent divide Balto-Slavic from Italic, Germanic and Celtic (2009: 23); but Greek (*centum*) breaks the neat arrangement of Northwest while Armenian with its fixed accent breaks the *satem* unity.

In the Veda, in Greek and probably in Avestan the accent was musical but in the later development of all three the accent became one of stress as in Baltic and Slavic.

xx. Gamkrelidze and Ivanov give as another isogloss the endings for the comparative of adjectives in *-tara/tero-* and superlative in *iṣṭa/iṣṭo* : these, they say are found in Indo-Iranian, Greek and Germanic. The superlative suffix is confined to Indo-Iranian, Greek and Germanic. But the comparative ending is found also in Italic (*dē-ter-ior, dex-terus, in-terus* etc) and in Celtic (*deini-thir* 'as swift as', *nach-tar* 'higher part'). So the spread is quite broad and cuts across our groupings.

With twenty isoglosses so far, we see first that there cannot be any neat grouping and some of them like those involving Tocharian, Anatolian and Slavic or Germanic or Celtic, cannot possibly be the result of early contiguity or later contact. Second, Sanskrit is seen with hard evidence to retain genuine elements of PIE and not arbitrary ones based on circuitous and speculative thinking.

Many scholars from the time of Meillet (1906-1922) to Mallory (2002), Kazanas (2003, 2009a), Andersen (2009) et al, take selected common vocabulary as isoglosses to indicate close relationship between two or more languages or establish retentions and losses. Earlier (§15) I used the terms for the commonest human relations (brother, daughter etc) as isoglosses. Now I shall take some well-attested IE theonyms for the same purpose, i.e. treat them exactly like morphological isoglosses.

xxi. Sanskrit, Slavic, Baltic and Germanic have the theonym *Parjanya, Perun* (and variants), *Perkunas* (some variants: note the velar *-k-* here, not palatal) and *Fjorgyn*. This name is not found in Hittite, Greek and Latin. But –

xxii. The theonym *dyaus/zeus* in various forms is found in Sanskrit, Hittite (DSius), Greek, Latin and Germanic – but not Baltic and Slavic. Then –

xxiii. The name of the Dawngoddess *uṣas/ēōs* in Sanskrit and Greek appears as *au[s]-rora* in Latin and *Eos-tre* in Germanic but nowhere else – although Baltic has the stem for 'dawn' *auśra*. Then again –

xxiv The Sanskrit harmoniser-god *Āryaman* appears as (Iranian *airyaman-*'friend'), *Areimene* in Mycenaean (perhaps *Are-s* in Greek), Celtic *Ariomanus* (in Gaul) and *Eremon* (in Ireland) and *Irmin* in Germanic.

xxv. Sanskrit Firegod *Agni* is found as *Agnis* in Hittite (! even though its lexeme for 'fire' is *paḫḫur*) and *Ogun* (and variants) in Slavic. Latin has the word *ignis* and Baltic *ugnis* 'fire' but not the theonym.

Since *paḫḫur* is the ordinary Hittite lexeme for fire, one would expect this to provide the name for Firegod. What is *Agnis* doing here, then? Where did it come from? But see next one, xxvi!

One cannot but notice how Sanskrit preserves all five theonyms (all in the *RV*), Germanic and Greek three, Hittite, Latin and Slavic two and Baltic and Celtic one only. (For the

overwhelming superiority of Sanskrit retentions see Kazanas 2009c, ch 3; 2009a; and 2001.)

xxvi. One set of counterparts for 'fire' consists of Tocharian *por/puwar*, Hittite *paḫḫur*, Greek πυρ (*pur*) and Germanic *fōu/fȳr*. Elsewhere we find cognates of *agni/ignis* etc. This isogloss also burns up all neat boundaries – with Tocharian in the east and north, Germanic in the far west and north and Hittite and Greek in the middle south.

Here again it is difficult to explain the movements from the Steppe east, south and westward to the exclusion of all others.

But when we consider that both Sanskrit and Anatolian have the theonym *Agnis* (i.e. groups A and B, *satem – centum*!) then the imbroglio becomes mind-boggling. Obviously no neat grouping or moving out of the Steppe can explain this and several of the other isoglosses – "maintaining their relative positions to each other as they fanned out from the homeland" as Hock put it (1997:17). There are here two factors. One, some IE speakers forgot, lost, innovated or borrowed more than others because of a long journey and because of the native culture they met at their locus of settlement. Two, only an urheimat in the east, like Bactria, will do; for from there Tocharian would move simply northward, perhaps together with others, but not in the opposite direction and so would neatly get out of the way. Then all the others would move westward and northward and to their respective habitats.

Let us now return to the perfect. We saw in **x** above the occurrence of the reduplicated perfect in many branches. However —

xxvii. There is also a simple perfect as expressed in Sanskrit *veda*, Greek οιδα. Gothic *wait*, all meaning 'I know (having known)'; also in Avestan, Latin, Slavic, Baltic (Old Prussian) and Celtic. Sanskrit and Avestan have other verbs also with unreduplicated perfect: they are mostly dhātus with medial -*a*- and they form this simple perfect mostly in the

weak persons (i.e. other than sing 1, 2, 3 Active) as in sing Middle 1, 3 *tepé* (and *ta-tá-pa*) from √ *tap* 'heating'; *mené* from √ *man* 'thinking'; and, more significant, from √ *cit* 'perceiving' > *cet-átur* dual 3 active, (and commonly *ci-kit-úr* pl 3) and from √ *yam* 'reaching, checking' > *yamúr* pl 3 (and *yemúr* ; also redupl *ya-yáma* sing 3). All thse forms indicate that there was also a simple perfect.

Tocharian and Hittite have no perfect, reduplicated or simple.

xxviii. Hittite has only a periphrastic perfect. This is formed with the active participle neuter accusative of the verb and the auxiliar *ḫar-/ḫar-ak* 'to have' in its finite forms as in *mar-kán ḫar-te-ni* 'all-you have cut'. Thus Hittite retains a sense of the perfect unlike Tocharian which has only present and past (preterite). But periphrasis, as we know from languages that are documented in historical times like Greek and English, is a late phenomenon.

However, Sanskrit also has a periphrastic perfect but only in post-rigvedic texts. In the *Atharva Veda* and in the *Brāhmaṇas* this perfect is formed with the accusative sing of a feminine of the root and the redupl. perfect of *kṛ* 'do/ make': e.g. *gam-ay-ām ca-kā-ra* 'one caused (someone) to go' (*Atharva Veda* 18.2.27), *vidām kṛ-* 'to have known' etc. In the *Brāhmaṇa* texts this is more frequently formed with the perfect 'to be' *as-* as auxiliary (and sometimes 'to become' *bhū-*). In Sanskrit too this periphrasis appears as a late phenomenon, not present in the *RV*, but it may be that it did not make it into the *RV*.

It is very interesting that Avestan also has a periphrastic perfect formed with the sing. accusative of the feminine of the present participle and the perfect of 'to be' *ah-* as auxiliary. This has important implications. It indicates that Avestan broke away from Indo-Iranian and not the reverse, as the mainstream Theory has it. If Sanskrit had broken away from the unified Proto-Indo-Iranian then, since Avestan has the

auxiliary *ah-*, the Vedic texts should have *as-* also, not *kr-*; *kr-* should appear later as a distinct Sanskrit innovation. Since in Sanskrit *kr-* appears first in the Vedic texts and *as-* appears later, then we must take it that Iranian broke away having both *kr* and *as-* as auxiliaries then abandoned *kr-* and kept only *as-* which became *ah-* (see **xii**, above for the Avestan *s>h*). This separation occurred at a post-rigvedic date..

(If Sanskrit had moved to Saptasindhu away from indo-Iranian in Iran, as the Theory claims, then the Atharva veda text would have had first the auxiliary *as*, carrying it from the common Indo-Iranian past, and only later, in the *Brāhmaṇas* etc, the auxiliary *kr* as an innovation. The evidence does not show this!)

Be that as it may, Greek and Latin and subsequently other languages developed a periphrastic perfect starting with passive formations with 'to be' as auxiliary and then active with 'to have'. But as Drinka shows in her excellent studies of *actual documentation* (2001, 2003 *passi*m), these are all late innovations and need not concern us.

Now then, an isogloss that occurs in Hittite and Indo-Iranian exclusively must, to any reasonable scholar, count as a near miracle since, according to the mainstream Theory, Hittite (*centum*, group A) left first and Indo-Iranian (*satem*, group B) among the very last ones; yet no other branch supposedly archaic or not, *centum* or *satem*, group A or B, has this periphrastic device — except Avestan, as noted.

Here, the industry of epicycles will offer a not unexpected one, saying that this phenomenon is random, accidental or entirely coincidental — just as the incidence of the Firegod's theonym is *Agni-* in Sanskrit and Hittite, even though we would have expected in Hittite a Firegod whose name would have contained the stem *pahhur* 'fire' and not *agni-*. And, of course, the use as auxiliaries in the periphrastic perfect of *ah-* in Avestan and *as-* in Sanskrit is, according to the same epicycle, such another random, coincidental phenomenon.

The insuperable and condemnatory difficulty is that this facile epicycle is used only when the actual, hard facts undermine hopelessly Emeneau's mainstream doctrine (see §7).

18. Conclusions. In the Introduction to her paper (2009), Drinka states:

> Hittite and Germanic [...] appear to have separated from the IE unity at an earlier time, judging from their archaic verb systems. Greek and Indo-Iranian, on the other hand, share a number of morphological and other innovations, and seem to have remained in contact longer. (p2.)

The first statement is hardly true. The second is partly true only because, with very few exceptions, Sanskrit has a unique all-inclusiveness and, as we saw, shares many features with most branches, as is obvious from the isoglosses we examined.

(a) Take the verb to be, the persons that have significant differences:

	Sanskrit	Hittite	Greek	Gothic
sing 1	ásmi	ēšmi	eimí	im
pl 1	smás	———	esmen	sijum
pl 3	sánti	ašanzi	eisí/entí	sind

For the 1st sing. Sanskrit and Hittite are close against Greek and Gothic, the oldest attested Germanic. Hittite has no extant 1st pl. and of the other three Sanskrit and Germanic show loss of initial stem vowel, which is retained in Greek. For the 3rd pl. Sanskrit and Germanic lose the initial vowel which is retained in Hittite and Greek. In fact there is not one instance of close similarity between Hittite and Germanic.

(b) In the Active primary endings Sanskrit, Hittite and Greek are much much closer than Gothic (e.g.: 1st sing *-mi* for the three and *-m* for Gothic; for the 2nd sing - *si* for the

three and -*s* for Gothic; for the 3rd pl *nti/ntsi/nti* for the three and -*nd* for Gothic).

In the Active secondary endings we have similarity for 1st pl with Sanskrit, Greek and Germanic -*ma* against Hittite -*wen*. In the 2nd pl we have Sanskrit -*ta(na)* and Hittite -*ten* against Germanic þ. Here again there is no closeness anywhere between Hittite and Germanic.

(c) In the Middle primary endings Hittite has the marker *r* whereas Sanskrit, Greek and Gothic do not.

In the Middle secondary endings, Gothic has the same as its primary endings while Sanskrit and Hittite and Tocharian have several similarities (1st sing -*i*, -*hat*, -*e*; 2nd sing -*thās*, -*tāt*, -*te*; 1st pl -*mahi*, -*wastat*, -*mät*; 3rd pl -*nta*, -*antat*, -*nt*.

(d) Also, Hittite has no dual (though some traces have been discerned) whereas Gothic does retain enough remnants both for primary and secondary.

(e) Hittite has no subjunctive or optative, only indicative and imperative. Gothic has indicative and imperative and a subjunctive which, in fact, continues the original optative. So here Germanic is closer to Sanskrit and Greek.

(f) Hittite has no simple and no reduplicated perfect (see §17, xii and xx).

Therefore, I don't see either the close relationship of Hittite and Germanic nor any archaism. And I can cite many IEnists who agree that Hittite underwent losses and syncretism in its entire morphology. For example, P. Di Giovine cites R. Lazzeroni who wrote: "la tradizione indoeuropea confluita nelle lingue anatoliche conosceva i sing paradigmi modali; cé che, per questo aspetto, essa non è più arcaica di quella confluita nelle altre lingue": '*the IE tradition preserved in the Anatolian languages must have had a rich modal system. In other words, the IE tradition preserved in the Anatolian languages cannot be older than that preserved in the remaining languages*' (2009: 10). He states: –

The absence of the category of Aspect in many IE languages appears to be an innovative feature [i.e. a loss], rather than an inherited one. The scarcity of moods typical of [...] the Anatolian languages [...] can be seen as a reduction undergone by the original system, and not as an archaic, original feature itself, a feature antecedent to the formation of a richer modal system. (2009: 18; my brackets.)

The following conclusions can now be drawn.

I) Theories that Hittite or Anatolian (and Germanic), or Tocharian are most archaic are wrong. No archaic IE branch, as Hittite is claimed by some to be, could possibly be established close by the PIE homeland (like Transcaucasia, as per G & I) and at the same time fail to retain any of the eight most intimate of human relations (brother, daughter etc). The presence in Hittite of laryngeals is now considered rather disappointing as several scholars indicate — from Lehman (1952: 25ff) to Mayrhofer (1986: 123ff), Clackson (2007: 58ff) and Marcantonio (2009). In any case, since they are not extant in any IE branch other than Hittite and since they are common in the neareastern tongues, it would be more correct to say that Hittite borrowed them as it borrowed most of its vocabulary and social customs from the neighbouring cultures. True, A. Sihler uses the laryngeals to obtain a simpler system of *Ablaut* or (*apophonie,* 1995: 11ff) but he also points out that another complication arises elsewhere as more sound laws are required — something already noted by Collinge (1985); and Clackson manages to find in Greek a rather unique "triple reflex" which is the outcome of h_1, h_2, h_3 (2007: 58-60), but all this is unnecessary. (See also §16, above.)

In §15 we listed several clear examples of attrition and loss in Hittite: feminines; the IE words for the eight closest relationships – where the presence of *-pat* 'just' shows that at one time it did have them; the dual; the instrumental and ablative plural. To these we can add the stem *agni* for 'fire' betrayed by the retention of the theonym *Agnis*; the negative

particles *na* and *mā* (and their variants); the participle in -*māna/meno*-; the participle in -*ant* which has not active meaning as in all other IE branches but passive, and perfective as in *kun-ant-* 'killed', 'or *pa-nz/a* 'gone' (Luraghi 2006: 185). These examples should be sufficient to show that this branch had lost the greater part of its IE character.

The only genuine archaic element in Hittite is its group of heteroclitic stems in *r/n* which, however, appear also in Sanskrit, Avestan, Greek and Latin — constituting yet another isogloss that cuts right through any grouping. Although Hittite has a larger number of such stems, yet many of them have no cognates in the other IE branches, as indicated by Sihler (1995: 299-300).

II) The only genuinely archaic language is Sanskrit. This conclusion is based on considerations of real facts in the actual languages, not concocted, unverifiable asterisk lexemes.

Sanskrit has preserved the two (or more) modes of negation (§17, xviii). In phonology it preserves the original *s* which others have as spirant *h* or lose it and it alone retains the voiced aspirates *gh* etc (§17, xi, xii). It also preserves the retroflex (or, sonorant) vowel *ṛ*, lost everywhere else.

It has the simple, reduplicated and periphrastic perfects. The last one appears only in Hittite as its only form of perfect and in Avestan (§17, x, xvii, xviii). We should note that for the periphrastic perfect, Avestan has as auxiliary not the verb *kṛ* but *ah-* (=S *as-*) which means that it broke away from Sanskrit after *kṛ-* was supplanted by *as–* in the post-Saṃhitā period.

Sanskrit has feminines not only in *-ā*, *-ī*, and *-ū* but also in *-i* and *u* and, even more important, in consonantal endings *pravát* 'distance/height', *sarít* 'stream' (see also S *ūrj* 'vehemence', Gk οργη, C *ferc*). Many of these are radical: *iḍ* 'refreshment', *ud* 'wave', *kṛp* 'beauty', *dṛś* 'look/sight', *dviṣ* 'hatred', *nid* 'contempt', *nih* 'she-destroyer', *piś* 'ornament', *bhās* 'lustre', *mṛdh* 'conflict', *vāc* 'speech', *vid* 'knowledge'

etc. It is thus indicated that the feminine gender was not an innovation but an inherent, integral part of PIE.

Moreover, Sanskrit retains some 20 theonyms whose cognates appear scattered in twos and threes in the other branches (§17, xxi-xxv; for more see Kazanas 2001 and 2009c: ch 3).

Beyond theonyms and feminines, Sanskrit preserves an enormous vocabulary that has counterparts or cognations present only in partial numbers scattered in the other branches. In a study of over 400 lexical items comprising as far as possible invariables like bodily parts, close relationships, simple natural functions like breathing, eating etc etc, I found that Sanskrit had lost 53, Germanic 145, Greek 149, Baltic 185 and the others more than 200 (Kazanas 2009a).

There are, of course, evident attritions and changes (like the presence of retroflexes, palatalisation, sandhi etc) but these phenomena need to be studied afresh without the distorting light of the AIT.

III) The isoglosses show that neither the Steppe nor Transcaucasia could have been the PIE homeland. Also that it is futile to try to establish groups, movements, contacts, stratifications and dates. There are difficulties whatever urheimat is postulated — in the West, in the East or in between. An analogy may help. If you stand on the North Pole, you can move only southward. After a few steps you have many options: further south, north, east, northwest etc. Once the branches split away, they developed independently according to the resolve of their speakers to preserve the mother tongue (and general culture) as pure as possible and to establish and maintain an oral tradition to this purpose; thereafter, they changed according to the cultures they met, the pressures they received on the way and at the place of settlement and their interaction with them. All these conditions and factors are not known despite the numerous theories propounded by IE linguists. The measure for all these conditions and factors

can be set, but only approximately, by the Indoaryan culture which seems to have retained the most elements in about every field.

See Figure 3. Map showing the "seven rivers" and Sarasvatī; various sites with Harappan artefacts far from Saptasindhu; also the two movements eastward by Āyu and westward by Amāvasu in Chapter 3.

And if a PIE homeland must be posited, then I would opt for the greater Saptasindhu which could have extended up to Bactria. Joanna Nichols decided on Bactria as the PIE homeland entirely on linguistic evidence of isoglosses, loanwords and the like (§14, middle) — and this is in harmony with archaeological, anthropological and other kinds of evidence. Some rightly consider these regions extensions of Saptasindhu (Frawley 2001). This may well have been so. In some passages the poets ot the *RV* recall that their ancestors had always done their sacrifices "here" — like the Angiras family (4.1.3) or the Vasiṣṭhas (7.76.4). But they also thought to spread far the Aryan laws (10.65.11). So, in one of the older hymns of the *RV*, addressed to the goddess and the river Sarasvatī, it is said: 'She, the holy follower of Universal Order, [Sarasvatī,] has spread us all [the five tribes of the Vedic people (stanza 12)] beyond enmities, beyond the other [seven] sister-rivers, as the sun spreads out the days' (6.61.9)[11]:

sā́ no víśvā áti dvíṣaḥ svásr̥anyā́ r̥távarī /
átann áheva sū́ryaḥ //

A post rigvedic text, the *Baudhāyana Śrauta-Sūtra* mentions explicitly two movements from the central region of Saptasindhu:–

prāṅ āyuḥ pravavrāja; tasyaite kurupañcalāḥ kāśi-videhā
ity etad āyavaṃ pravrājam; pratyaṅ amāvasus, tasyaite

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[11] The river Sarasvatī was in those ancient times regarded supreme and the "seven

gāndhārayas parśavo 'rāṭṭā ityetad āmāvasavam.
'Āyu migrated eastward; his [descendants] are the
Kuru-Pañcalas and the Kāśi-Videhas: this is the Āyava
migration. Amāvasu [migrated] westward; his
[descendants] are the Gāndhāris, the Parśus and the
Arāṭṭas: this is the Āmāvasa migration.'
(*Bau Śrau* 18.44.)

The Kuru-Pañcalas and Kāśi-Videhas are people (and
regions) east of Sarasvati in the basins of Yamunā and Gangā.
The Gāndhāris are obviously west of the Indus, and the
Parśus are the Persians (=Iranians) while the Arāṭṭas must be
even further west. Now, the Mesopotamian text *Emmerkar
and the Lord of Aratta* (Kramer 1952) refers to Aratta as north-
west of Uruk. So Aratta here cannot be the region in Punjab as
Frawley thought (2001: 224, 226) and as I concurred
(Kazanas 2007: 70). On the basis of the Mesopotamian text
and Baudhāyana's text, B.B. Lal's suggestion of mount Ararat
(Lal 2009: 134) seems more probable; but I would add the
region Urartu, southwest of Armenia. So Anatolians probably
belong to the Amāvasu emigration of the Indoaryans.

Be that as it may, it is not difficult, surely, to envisage
emigrations into Bactria or south of it and, thence, farther
north in Iran and then northwestward to the Near East or the
Steppe and to Europe. In this scenario the difficulties with
Tocharian are obviated. Anatolia is far enough to explain the
prodigious losses suffered by the Anatolian dialects,
especially, if the speakers travelled as elit warriors without
women and children (i.e. Hittites). The Kassites and Mitannis
followed the same route but stayed in northern Mesopotamia.
The other branches moved westward with Greek, Italic and
Celtic turning south while Germanic and Baltic turned north.
And they all had plenty of time and space to meet and share

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sisters" (sometimes, daughters or young ones) are the other rivers, which are
in fact more than seven; but "seven" is an auspicious mystical number.

or develop common traits in language, religion and law or social customs. However, this is another story that needs not only linguistic but also anthropological and archaeological evidence. Genetics tells us now that "It is not necessary, based on the current evidence, to look beyond South Asia for the origins of the paternal heritage of the majority of Indians at the time of the onset of settled agriculture [=c7000 BCE]" (Sahoo, Endicot et al 2006: my brackets). But even earlier it was shown that "Indian tribal and caste populations derive largely from the same genetic heritage of Pleistocene [i.e. c 10000 to 3 MYA] southern and western Asians and have received limited gene flow from external regions since the Holocene [=c 10000 to present] ... these southern Asian Pleistocene coastal settlers would have provided the inocula for the subsequent differentiation of the distinctive eastern and western Eurasian gene pools" (Kisilvid, Cavalli-Sforza et al 2003: my square brackets). Oxford geneticist S. Oppenheimer independently provides more specific and emphatic evidence and reverses the direction of migration(s): "South Asia is logically the ultimate origin of M17 [=Caucasoid (=Aryan) marker] and his ancestors ... thus undermining any theory of M17 as a marker of a 'male Aryan invasion' of India" (2003: 152: my brackets). He adds that the M17 marker could have travelled from India-Pakistan (= 'Saptasindhu' in our Maps, Fig 2 and 4) through Central Asia, Russia and then Europe after about 50000 BP, which, if further confirmed, will make absolute nonsense of the IE linguists chronologies. In 2010 P. Underhill *et al* corroborate these findings with their R1a1a and M458 mutations, thus agreeing with S. Sharma *et al* in the *Journal of Human Genetics*: "The Indian origin of paternal haplogroup R1a1 substantiates the autochthons origin of Brahmins and the caste system" (2009).

Consider what is happening to English in the UK, in the Caribbean islands, North America, Pacific islands, Australia, New Zealand, India and South Africa. In each region we find

attrition and innovation, different accents, different meanings to the same words and even different spelling (USA 'thru', 'center', 'color') and pronunciation show most eloquently that mutations happen in the fringe as much as if not more than the centre which is the UK! We have rich documentation now and can chart and explain these changes. Not so, from the pre- or proto-historic period of the IE diffusion. Theories merely obfuscate the issue.

6. Language, the Cyclicity Theory and the Sanskrit Dhātus

Argument. Sanskrit alone has dhātus or roots in an absolute sense. This fact and the accompanying complex morphology of Sanskrit show that language (human speech in general) started as a highly synthetic phenomenon. With the passage of millennia it gradually devolved into a simpler morphology and many descendants. Within this larger movement of decay several tongues moved from a rather fixed syntactic isolating status back to a fusional condition with new complex morphology (e.g. Coptic from Old Egyptian, Modern from Old Hungarian etc.). These are smaller segments of cycles within the larger descending spiral. An examination of several nominal and verbal endings in Sanskrit and Proto-Indo-European shows that these endings do not come from original pronouns, pre- or post-positions and similar morphemes.

How did language begin? How and why does it change?

1. It is generally thought that languages tend roughly to follow a circular course moving from isolating to agglutinative to fusional typology then back to an isolating status and so on (Dixon 1997: 42; Hodge 1970 passim). Let us define these terms for types of language. Classical Chinese is an **isolating** language, where every meaningful lexeme is a distinct word; English has over the centuries moved toward this position. **Agglutinative** tongues have words which are compounds containing several meaningful

elements that can be separated, such as Turkish and Hungarian. However, Hungarian is for some time now moving towards a **fusional** state, where a word contains a stem and other elements marking noun cases, number and gender and in verbs person, number, mood, tense, activity, passivity and so on: typical fusional tongues are the classical ones like Latin and Sanskrit and Modern Lithuanian and Russian.

This view of the cyclical movement certainly appears to be true in many cases but it does not take into account some important factors which will be examined in the ensuing discussion. The most important evidence against this theory is found in the Sanskrit dhātus and the language's complex morphology.

In this paper various reconstructed Proto-languages will not be examined at all. Studies of Romance languages attempting through the comparative method to arrive back at the original Proto-Romance i.e. Latin, achieved only very partial success – and we must note that the linguist who made this effort knew Latin (Hall 1950, 1970, 1985). A similar attempt comparing modern Indian languages to arrive at their original Proto-language, i.e. Sanskrit, again yields only a partial success – and again the scholar knew Sanskrit (Southworth 1958).

E. Pulgram pointed out caustically (1958: 147) that, without documentation, our picture of classical Latin would have been quite different, since Romance languages today have for 'horse' derivatives from the late vulgar Latin *caballus* (French *cheval*, Italian *cavallo* etc) whereas Cicero, Virgil and Tacitus used *equus* (the common IE stem found in S *aśva* etc). Take another example. Modern Greek has verbal stems *adrachn-* 'grasp', *deichn-* 'show', *diōchn-* 'chase away', *richn-* 'throw', *sprōchn-* 'push', *phtiachn-* 'make'. Now, at first sight one would think that these stems had the same more or less final conjunct in Ancient Greek, also. However, documentation shows that the original stems differ

almost incredibly: number one is *adratt-*, two is *deikn-*, three is *diōk-*, four is *rhipt-*, five is *eis-pro-ōth-* and six is *eutheiaz-*! We know only because we have rich documentation – from Homeric through Hellenistic and Byzantine Greek up to our own times. A different aspect is seen in cognates English *devil*, French *diable* etc; here again, only documentation reveals that all these are loans from Gk *diabolos* 'twister, ill-speaker'. Finally, Hungarian *haz(a)* 'house', indeed, looks very much like the various Germanic cognations for 'house' but documentation shows that they are not related because the older Hungarian word is *kaz-*.

The examples given illustrate clearly the dangers involved in reconstructing Proto-languages and since there is no means whatever of verifying the reconstructions, these remain unreliable. Consequently all efforts dealing with Proto-this and Proto-that (with asterisks ***) seem to me wasteful and worthless. I shall consider hereafter evidence from only actual historical, well-attested languages and refer to Proto-Indo-Europeans only for some specific cases borne out by Sanskrit.

It is as well to remember that language is not an organic entity like a plant or an animal that grows and degenerates due to biological processes; nor a material artefact like a spoon, a pianoforte or an aeroplane that will change and decay after a period even if it is not used. A language changes only because of human action which is always purposeful, but sometimes irrational, often mechanical, erratic or accidental and unpredictable. The only certain principle governing human action is the desire for greatest gain, or the best result, with the least effort.

Linguistic changes are known only after the event and, of course, only if there is ample and detailed documentation. The so-called "laws" of linguistic changes are abstracted from such well-documented periods, areas and phenomena and apply only to those specific periods, areas and phenomena. As M. Alinei puts it: "The rules are determined

a posteriori, they take into consideration only changes that have taken place, and do not represent a 'law' existing prior to change itself, independent of it and therefore foreseeable" (2005: 22). Talk of "universal" or "constant" laws of change is sheer nonsense. The only universal or constant aspect of linguistic change is that for that period, area and phenomenon the result was the easiest, simplest and most convenient in the circumstances.

Thus the tendency of innovations or changes is towards simplicity or ease rather than complexity and difficulty. Let me give some examples. First Latin > Italian *factus* > *fatto, septem* > *sette, somnus* > *sonno*; etc. etc. Or a similar process in Sanskrit > Pali: *mukta* > *mutto, abja* > *ajjo, śabda* > *saddo*; etc etc. Then take American spelling: *thru* < *through, valor* < *valour*; etc. etc. Finally an example from Greek: the perfect was generally formed with reduplication of the initial of the stem and the ending *-ka*: thus *lūō* 'loosen' gave *lé-lu-ka* 'I have loosened'. This is very simple. But we also have *thúō* 'sacrifice' giving *té-thu-ka* and *phú-ō* > *pé-phu-ka* and even *aitō* > *éi-té-ka*, or *elaúnō* 'move forth' > *el-éla-ka* or *ómnumi* 'swear' *om-ómo-ka*. On the whole, this is hardly a simple and convenient situation: it taxes the memory. So when the periphrastic perfect was developed in classical times with the auxiliary *échō* and the form *lūsēi* (or *thúsēi, elasēi* etc), the reduplicated forms fell into desuetude and for centuries now Mod Gk has only the periphrastic perfect – in the passive as well (*échō luthē* 'I have loosened myself'). The same is observable in Mod English, Italian, etc.

Different declensions and conjugations with different stems (and often endings) tax the memory. It is more convenient to have streamlined declensions and only a few auxiliaries for conjugations ('to be' and 'to have'): the result is a much easier situation all round.

Unfortunately, linguists produce their theories and reconstructions without taking into account this simple principle.

2. R. Dixon refers (1997: 42 n 11) to S. Delancey (1985) who offers a useful discussion and evidence for this cyclical phenomenon. But before going on with this, we should define more clearly the phenomenon.

The movement is said to be from a fully syntactic condition with the barest morphology to agglutination and some morphological developments through synthesis of stems and various kinds of postpositions for nouns and for verbs; then to more complex morphology such as found in Latin, Old English etc; then to attrition of endings (mostly) and dissolution of the complex inflected forms back into an increasingly syntactic position using auxiliaries like Italian and Mdn English. Using S/s for syntax, C for Complex and M/m for morphology the movement can be represented as

$$S/m \rightarrow M/s \rightarrow CM/s \rightarrow S/m$$

We could remove the CM/s stage or introduce additional grades but the stages given explain adequately the cyclic process (a modification of Hodge 1970). J. O. Askedal refers to other authorities and describes this "cyclical evolution" as follows (2001: 1635):

A. agglutination   B. fusional inflection

D. isolation   C. phonetic attrition

Various other models and more refined versions (pp 1635-6) do not differ substantially from the basic pattern. He himself examines various concepts of typological change and concludes that "theories of typological cyclicity ... are in general conjectural due to the fact that, as far as we can tell, no known languages or language families have been attested in all the stages required for completing a full cycle" (ibid).

Theoretically one could start at any main stage of the pattern but the general notion is that languages started at the isolating or syntactic analytic stage (Campbell 1993; Hirt 1927-34; etc).

3. S. Delancey indeed examines the circular motion within languages of the Tibeto-Burman family. He takes examples from three stages of directive verbs (for motion): he says that this "directive category is regularly reinvented in the TB languages and almost as regularly lost again" (p 367). We have no reason to doubt Delancey's claim with regard to the TB family of languages. But we do find a problem in that *the cyclic pattern is not given by him in any one language.* He gives one stage in Newari and another in Lahu and yet others in other languages. He actually points out that any one stage may "be stable over time" as indeed happens with "syntacticized motion verb constructions" in the Tai languages (p 385). He writes that in Sema "the process of grammaticalization is complete" in that motion verbs *gwo* 'go' and *re* 'come' which appear as separate verbs in other tongues, here agglutinate into gwo/wu 'go' and *gwo-re* 'come' (p 372). More evidence of these stages is given in the subsequent pages but, again the examples of syntactical to morphological to syntactical stages are taken from different languages and reconstructions of proto-languages – Akha, Loloish, Nujaang etc (pp 374 ff). But, as we said, this cycle can be accepted starting, say, with motion verbs used syntactically as specifiers of deictic orientation for other verbs; then "these syntacticized morphemes begin to agglutinate into the verb complex" in the process of morphologization (p 380).

4. The Finno-Ugric family offers a much clearer and more convincing case of this cyclic pattern, or at least the segment where syntactical morphemes like noun-stems and various types of postpositions agglutinate and produce morphological flection (or grammaticalization). We take Hungarian as the example.

Hungarian undoubtedly exhibits for some centuries now the on-going process of moving from a purely agglutinative typology to a fusional one: Sm → Ms (where Sm = predominantly syntactic; Ms = predominantly

morphological). This is pre-eminently obvious in the
nominal forms where various morphemes as postpositions
have become fixed terminations. E.g.:

*a haz*ϕ 'the house' with zero marker for the Nom Sing.

a haz-ban 'within the house', Loc Sing.

a haz-ak-ban 'in the houses', Loc Pl.

The *a* is the definite article. In the third form the suffix
-(a)k is that for the plural and the *a* is auxiliary (cf *gyerek*(*-e*)
'child' Nom Sing, *gyerek-ek* 'children' Nom Pl). The suffix
-ban is a reduced form of an old (but still existing and
productive) noun *bele* 'interior' + the suffix *-n* 'in, within'
(Marcantonio 2000: 8.3.2, where several more such
morphemes are given). Thus strictly speaking, we have 'in
[the] interior of the house'. One should note here that the
plural marker *-ak* precedes the locative suffix *-ban*. Anyway,
one finds similarly *haz-zal* 'with/ by means of [the] house',
the Instrumental case; or *haz-nak* 'to/ of [the] house' which
is both Dative and Genitive; and so on. Depending on how
one wishes to count, one finds that the language has now
18 to 22 cases.

However, despite this increasingly complex
morphology, the agglutinative character does not seem to be
lost. Unlike the Classical IE languages, in Hungarian the
marker for the case comes at the very end. Not only the
plural marker but also the possessive one precedes the case
ending. When there is a personal, possessive marker, then
the plural marker is -i (or *-a-i*). E.g.:

a haz-a-i-m 'my houses'

a haz-a-i-m-ban 'in my houses'

While now the suffix *-ban* has become a definite locative
marker, it is not like the terminations of Sanskrit or Latin or
Lithuanian which give greater elasticity and subtlety. E.g.
Sanskrit:

vāstu → *vāstuṣu* 'house' → 'in houses' (Loc Pl)

mama vāstuṣu or *vāstuṣu mama* 'in my houses'

(*madvāstuṣu* or *vāstuṣu me* 'in my houses';

madīyasu vāstuṣu or *vāstuṣu madīyasu* 'in my houses').

Thus while Sanskrit shows greater freedom in word-order, Hungarian morphology seems to have the same fixity as that of the English invariable sequence 'in my houses'. Thus this fusional character is very limited.

Nouns have no gender, not even the small degree that English displays. Absence of gender is observable in all Finno-Ugric languages from their very earliest attestation (Marcantonio, ibid).

The verb conjugation shows, according to some authorities a movement in the opposite direction, if anything, towards simplification, although others dispute this. It is said[1] that Hungarian, by the late stage of its Old Period (before 1500 CE) had developed six tenses: Past Narrative (preterite), Past Finite and Past Complex (perfective); Present; Future Simple and Future Complex. Today there is only Past Finite and Present. So, in effect, there are only two tenses, past and non-past.

Futurity is expressed by the Present and some adverb. In literary forms, it is expressed by the conjugated auxiliary *fog* and the infinitive: thus –

fogom varni/adni 'I shall wait/give' etc.

Sometimes the prefix *meg-* is used to the same effect: e.g. *megirom* 'I shall write', where *ir-* is the verb stem and *om* the 1st person termination for the Definite construction (*-om* marking an indefinite statement like 'I (shall) write a book (sometime)'.

The Past Finite continues today with the marker(s) *-t/-tt* as in *vartam* 'I waited' and *tanit-ott-am* 'I taught'. The older language had also the Past Complex (a kind of Perfect or Pluperfect with the invariable auxiliary *vala*) as in –

elementem vala ... es meghalgattem
'I had gone ... and [then] listened.'

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[1] Encyclopaedia Humana Hungarica: on the Internet – http://mek.oszk.hu/01900/01993/html/index2.html

The Past Narrative had a full conjugation in the indicative both for transitives and intransitives (again Encyclopaedia Hungarica Humana): e.g. –

trans: *várám, várád, vará, várok, várátók, várák.*
intrans: *várék, várál, vará, váránk, várátók, váránák.*

However, all this is said to be rare literary formations (including the inflected Fut) and not original Old Hungarian. Be that as it may, the verb does not show any indications of moving, like the noun, towards greater fusional complexity.

Another interesting point in Hungarian (and Finno-Ugric) is the Vowel Harmony. This is an aesthetic phenomenon where suffix vowel(s) must agree with stem vowel(s) – whether front or back vowels (*nyelv-em* 'my language' but *haz-am* 'my house'): there is no grammatical or semantic function, as with the Germanic ablaut system, exhibited in English *sing, sang, sung* and *ring, rang, rung*. We note also that even in Modern as well as in Old Hungarian this rule is not followed in several cases. Scholars give examples from both periods: e.g. (Marcantonio 2000: 8.5):

Old: *bu-a-beleul* 'from her sorrow'
Mdn: *bú-já-ból* 'from her sorrow'.

I wonder whether this Vowel Harmony having no grammatical function at all and, really, serving no semantic purpose, is not a devolution from a remote state of the language which had an ablaut system similar to the one in Germanic or in Sanskrit with full semantic force.

5. C.T. Hodge makes references to Finno-Ugric including Hungarian (1970: 2) and to other languages (p 3) but focuses on his specialty, Ancient Egyptian and its later transformation into Coptic (p 3ff) and, more specifically, on the verb. He states that Late Egyptian lost much of the flectional morphology of the Old language but Coptic, evolving as it did out of Late Egyptian (with the help of Greek and Christianity), developed an equally complex system. This had eight basic tenses for the verb, four affirmative and four

negative and many more satellite constructions – which are not explained. (The negative tenses are just that, and hardly count; but one future, one present and two past tenses certainly give a complex morphology.) Citing earlier authorities he says: "the Old Egyptian syntactic verb of the suffix conjugation changed into the analytic Late Egyptian verb, and finally into the Coptic synthetic verb of the prefix conjugation". He stresses this change (p 4): "The interesting aspect is the almost total loss of the inflected forms – with suffixes – and the later appearance of inflected forms with 'prefixes' (or noun subjects in that position)."

This change can be seen clearly in a simple example (from Loprieno 2004: 180):

a) OEg: *sḏm.ḥr-f*   Coptic: *ša-f-sôtm*
        hear+Aor+he   Aor+he+hear

Both denote habitual action with present meaning: 'he usually hears'.

Here we sense a difficulty in that 'inflection' has always been associated with suffixes and terminations in declension and conjugation, not with prefixes of pronouns and nouns in that position. In fact, the Coptic verb has not gained any inflections but shows now an agglutinative aspect with prefixes. This is as rigid as any agglutinative system (e.g. Hungarian) and an analytic syntactical sequence (e.g. English). Hodge gives the sentence (p 5) –

b) *sbte peköagye*   *tarousotmef*
       'prepare your   and-the-result-will-be-that
        speech   (*tar-*) they (*ou*) hear it (*ef*)'

The noun has masculine and feminine gender which is distinguished, not by a suffix as in OEg, but by the definite article: p-*rôme* 'the man' (m), t-*sône* 'the sister' (f). There is no dual, as there was in OEg, and the plural is given by the prefix-marker *ne/ni* which is the plural definite article – through a few nouns do have a plural suffix. Since neither

OEg nor Coptic have noun declensions we need no pursue this matter further.

The Old language was flectional but at its Late stage moved towards a syntactic condition; but, as Hodge observes (p 5), at no time do we find a purely syntactic state. Although polysynthetic, the Coptic morphology is, in fact, fairly fixed so that the verb has a prefix marker conveying "aspectual, temporal or modal features, followed by the nominal or pronominal subject and by the infinitive" (Loprieno 2004: 181): e.g. a-i-hmoos Past-Pronoun-Verb = 'I sat down'; *a-p-rôme sôtm* Past-Article- Noun- Verb 'the man heard'. There are some minor variations and, of course, more extended sentences.

However, neither Coptic nor Old Egyptian have the complex morphology of Latin or Sanskrit. Old Egyptian itself had already lost certain features that are common in other descendants of Proto-Afro-Asiatic like the dual number and cases Nom. Acc. Gen. and perhaps Directive (Huehnergard 2004: 146); there may have been even a neuter gender in the distant past, now expressed by curious feminine constructions, as pointed out by A. Gardiner (1957: 86, § 111; 271, §354). J. Huehnergard states that in the descendants of Proto-Afro-Asiatic some nouns "are construed as both masculine and feminine" (2004: 147): this suggests indeed a former neuter gender but this is very speculative. A. Loprieno cites Hodge (1970) and states explicitly that in Coptic the former analytic patterns of Late Egyptian "are reanalysed as polysynthetic structures (sentence and clause conjugations) marked by heavy prefixing" (2001: 1760). Nonetheless this change S/m → M/s is a minor one (mostly verbal) and, in any event, Coptic not only did not develop a more complex morphology but, in fact, froze into its own syntactic patterns like English. (Loprieno does not make a similar statement in 2004.)

6. Most academics like to conjecture about this subject in order to fill gaps. Hodge does the same in respect of Proto-

Afro-Asiatic. He thinks that this was probably predominantly syntactic whereas others now say it was fusional (Huehnergard 2004: 140). He also uses assumptions from other scholars to arrive at the conclusion that "morphology is the result of syntactic constructions". In this he agrees with earlier linguists, like F. Bopp, K. Brugmann, H. Hirt and others (Hodge, 2-3) and cites from them several relevant passages. We take one of these citations from Brugmann which illustrates this view: "In the parent language, phrases made up of a word denoting some condition or action and a personal pronoun, used as a sentence in which the latter was subject and the former predicate, coalesced and became a single word: this is the origin of all finite verb-forms" (Hodge, 3).

To be fair, Hodge cites also Otto Jespersen who holds the opposite view. This is all very well as a theoretical generalisation but no scholar (to my knowledge) shows with concrete examples what post positional pronouns, or other significant morphemes, as is obvious in Hungarian (§ 4), coalesce with words of "condition or action" to become terminations in nouns and verbs.

Like many an indoeuropeanist, egyptologist Hodge does not quite realize the fact that we know nothing about PIE beyond the conjectural reconstructions which can't be verified! But he ought to know that Hirt and others are merely making assumptions about PIE. Moreover, by the late 1960's even the conjectured reconstructions showed that PIE had a most complex morphology – as will be demonstrated herein below, on the basis of the extant branches. Hodge ought to see also that using Yakut, a Turkic language, to claim a syntactic origin for IE inflections as Hirt had done (Hodge, 3) is methodologically unacceptable.

Hodge also seems to think that Hittite is closest to PIE, again as most indoeuropeanists continue to think. This is still controversial. Undoubtedly Hittite retains several archaic elements but nothing (apart from the controversial laryngeals)

that is not found to differing extents in one or another branch. But we have yet to see a reasoned explanation why this supposedly archaic language lacks so many features common to the IE branches: i.e. the stem for horse (L *equus*, Mycenaen *iqo-*, S *asva* etc); the stems for the eight commonest relationships – brother, daughter, father, husband, mother, sister, son, wife; the third gender; the dual; the roots as seen in Sanskrit (to be explained below). Moreover, it has (apart from the smothering elements from non-IE languages of the Near East) auxiliaries like *man*, which, with the present indicative, forms conditional modality and which hittitologists regard as rather modern (as Hodge himself admits, p 5). All in all, Hittite shows a state of devolution from a complex morphology like that of later Iranian branches from Old Avestan (Sims-Williams 2006: 140). Even so, with its six noun-cases, its two distinct verb conjugations (e.g. *epmi* 'I take' and *arhi* 'I reach'), its Active and Mediopassive Voices and its tenses etc (Luraghi 2006: 182-5), Hittite is still a highly inflective language and Hodge is not justified in ascribing to it "a comparatively light morphology" (p 5) – a description appropriate rather for Old Egyptian and Coptic. Finally it is worth pointing out that several authorities have found traces of feminine termination (e.g. Melchert 1992; Weitenberg 1987).

7. The contention for the cyclical S/m → M/s → CM/s → S/m is not attested in any known language or family of languages going as far back as 1500 or 3000 BCE (see §2). It has been erected on assumptions that have little basis on facts and reason. I say this advisedly because there is Sanskrit, little known to most linguists, which has a unique morphology that defies this hypothetical cyclicity and the assumptions supporting it. As was said, there is a spiral movement with smaller cycles that do, indeed, show shifts from syntactical to morphological, back to syntactical stages and so on, but the general direction is from CM/s to S/m. At least this is what Sanskrit indicates – and by Sanskrit I

mean the entire Old Indic language including the earliest Vedic stage. This language has features which cannot be explained away by the linguistic assumptions and processes given by those who support circularity.

8. Alone of all known languages Sanskrit has *dhātus*, i.e. actual roots which generate both nominal declension and verbal conjugation: thus √*īś* > *īś* (m) 'lord' and *īś*-te 'reigns'; √*ruc* > *ruc* (f) 'lustre' and *āru-ruc-at* (redupl aor) 'one shone'; √*sad* > *sad* (adj) 'sitting' and *ā-sad-at* (aor) 'one sat'; etc.

As the word 'root' is often (mis-)used for 'stem', we shall use hereafter the term dhātu. Some 2000 dhātus, 'seedforms' really, are recorded in Sanskrit but only about 700 appear also in the early Vedic literature[2] and of these only 200 are actually nominal and verbal – and not theoretical postulates. The others were pushed out of use as radical nominal forms probably by other primary derivatives: e.g. √*am* 'moving, injuring' and *āma* (m) 'pressure, illness'; √*kṛ* 'doing' and *karā* (m/f/n) 'doer, making' and *kṛt* (adj at end of compounds) 'making'; √*jīv* and *jīvā* (adj) 'living', (m) 'living soul'; etc. Even so the 200 are an inheritance that cannot be overlooked. The nominal endings and the verbal affixes (suffixes and infixes) also cannot be overlooked in the present discussion. As T. Elizarenkova put it, "the verb-root [i.e. *dhātu*] is basic to both inflexion and derivation ... it is irrelevant that for some roots such nouns are not attested" (1995:50). In other words originally all nouns and verbs had or arose out of dhātus but, for various reasons most dhātu- or root-nouns were lost. The notion that the dhātu is an abstraction made by grammarians should therefore be dismissed: the ancients knew the dhātus as generators of both nouns and verbs through certain grammatical, phonetic regulations.

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[2] It would not be entirely reasonable to expect that **all** existing dhātus would have been used in the early texts.

At the outset it should be said that Sanskrit has suffered losses and has made innovations but probably to a lesser degree than other IE branches (Fortson 2004). Some devout Hindus declare that this *devavāṇī* 'language of the gods' is eternal and, in fact, the Proto-Indo-European language, but obviously they do not take into account simple facts of change within the well-documented language. To take one example, the form, say, for Nom dual m. *aśvinā* 'two horsemen' eventually gave way totally to the form *aśvinau*. Another change is the abandonment of the richly inflected forms, especially verbs, in favour of very long compounds. However, neither the attritions nor the innovations will engage our attention except in so far as the former show, in association with other IE branches, that PIE must have had an incredibly complex morphology.

Some scholars hold that the dhātu is the original language-unit and that people thought and spoke in dhātus. Thus an Indian scholar dismisses various theories about the original structure of language in general and concludes that "what we can accept without any contention is the statement that every root is the undeveloped sentence of primitive man" (Chakravarti 2003: 220). This may have been so, but we have no proofs. So let us look at the facts exhibited by Sanskrit.

One fact we must bear in mind is that of vowel strengthening (ablaut). Sanskrit has five basic vowels arising at distinct places of articulation and then undergoing two degrees of strengthening – *guṇa* ('twine, multiplier, secondary' etc) and *vṛddhi* ('full growth').

	Guttural	Palatal	Retroflex	Dental	Labial
Simple	a (schwa æ ?)	i	ṛ	ḷ	u
Guṇa	a	e	ar	al	o
Vṛddhi	ā	ai	ār	āl	au
	kaṇṭhya	*tālavya*	*mūrdhanya*	*dantya*	*oṣṭhya*

Clearly there is asymmetry with the the **a/ā**. We can only speculate and one useful idea is that the simple vowel was

schwa **æ** (?). Also metrical considerations often but not always show that a very short **a** should be understood to exist between a consonant in conjunction with - *r* - or a nasal; this is called in the Prātiśākyas (=manuals of pronunciation) *svarabhakli* 'vowel-section': e.g. *índara for índra, yajañá for yajñá* etc.

The retroflex *r* is often said to arise close to the dental *l* but this does not affect our discussion and the *l* is found only in one dhātu √*klp* 'be suited'. The *a* obviously does not follow the regular pattern. While e and o are long (in the Guṇa grade), *a, ar* and *al* are short. But these too don't affect our discussion.

Only Sanskrit of all IE branches has this almost invariable graduation and has 10 distinct classes of dhātus from which are generated families of words (verbs, nouns, adjectives).

9. In the native *Dhātupāṭha* 'Lists of seedforms' are given 10 categories or classes of dhātus that develop as verbs with very particular morphological features. The tenth is mostly denominative and need not occupy us.

a) Class 1, *bhvādi*, the √*bhū* 'becoming' and the rest strengthen their vowel (*bhū* > *bho-*; cit > cet; *sṛp* > *sarp-*; etc) then take suffix -*a*- unaccented, which is the class marker, and then the verbal terminations for the person, number, mood, tense and voice, which are the same endings for all classes. Thus, √*cit* > *cet-* > *cét-a-ti* 'one knows, perceives'; similarly √*kṛs* > *kars-* > *kárs-a-ti* 'one drags (something)'. The accent falls on the stem vowel. But the ending for the middle voice is different *kárṣa-te* 'one drags (something) for oneself' and is the same ending for the passive, which is formed with the dhātu itself and its own accented marker (= -*yá-*) *kṛs-yá-te* 'one is dragged'. The passive is formed similarly, with the dhātu and the (accented) marker -*yá-* and the middle-voice endings in all classes.

Class 1 has the bulk of the dhātus, i.e. over 1000.

b) Class 2 *adādi*, the √*ad* 'eating' and the rest strengthen their vowel only for certain persons in certain moods and

tenses then take the regular endings directly and have the accent on the stem in the strong persons and on the ending in the unstrengthened ones. Thus √*dviṣ* > *dvéṣṭi* 'one hates' but *dviṣ-ánti* 'they hate'. Here there is no marker at all.

Note (i). This would seem to be the most natural way of conjugating a verb – affixing the endings directly to the modified, or not, root-stem. Old English does it, Latin, Greek and so forth – but with variations in the ablaut. On the other hand these branches have no dhātu as such, only stems. Even Hebrew has only a notional root of two and more commonly three consonants without actual independent existence as with S √*kṣudh* > *kṣudh* (f) 'hunger' and *kṣúdh-yati* 'one hungers (after)'.

Note (ii). Other tenses (i.e. perf, aor etc) do have strengthening as in 3rd perf *di-dvéṣ-a* 'hated' or √*muh* 'be deluded' > fut *moh-iṣyáti* 'will be deluded', etc.

c) Class 3, *juhotyādi*, the √*hu* 'sacrifice' and the rest have reduplication of the initial syllable (and variants) and strengthen the root stem in certain persons etc as in class 2, then take the endings: e.g. √*dā* > *dá-dā-ti* 'one gives' (already strengthened, or rather fully-grown); *viṣ* > *vi-veṣ-ṭi* 'one is active'. Note that dhātus with initial *h* reduplicate with j: so √*hu* > *jú-hoti*, √*hrī* > *jí-hreti* 'one is ashamed'. It may be that at a much earlier stage in PIE S|*h*|was a different consonant capable of devolving into both |*h*| and |*j*|; the equivalent Gk *ch* χ (in *cheō, chous* etc) would suggest some such origin. Here too we are speculating. There are other phonological peculiarities (√*mā* > *mi-mi-te* 'measures' but perf *mamā-*; √*hvar* > *jú-hūr-* 'be crooked'; etc), but they do not affect the main issue – that these dhātus have reduplication.

d) Class 4, *divādi*, the √*div* (or √*dīv*) 'play, light, joy etc' and the rest have their root-stem unmodified and accented and take the marker -*ya-* unaccented and then the usual terminations for present (all moods) and imperfect: *dív-ya-ti, kṣúdhyati* 'one hungers', etc.

But here some root stems show reduction as with √*spaś* > *páś-ya-* 'see', √*vyadh* > *vídh-ya* 'pierce' etc while others show

lengthening as with √*tam* > *tā mya-* 'faint, darken', √*śram* > *śrāmya-* 'be weary' etc.

So changes there were on many fronts, disturbing an original order which must have been marvellous but no longer reconstructible.

e) Class 5 *svādi,* the √*su* 'press out, extract' and the rest take affix *no* on strengthened persons (as in classes 2 and 3) and *nu* or -*n-* on the unmodified root-stem, then the endings: *su-nó-ti* 'presses out', *su-nu-tá* 'you (pl) press out' (impv); √*śru* > *śrnóti* 'one hears', *śrnvánti* 'they hear'; etc. The affixes *no/nu* are very simply markers for this 5th class: **they have no semantic function that we know of!**

One could speculate and argue that this **nū** affix derives from a morpheme like the sanskrit particle **nu/nū** 'now, still, now then' or the Latin **nunc,** but there is no such significance in any of the Vedic dhātus. Nor is it a present-action marker since we find it in past action as *áśṇu-an* 'they were listening to', *avṃo-t* 'one covered'. In Hittite, verbs in -*nu* had the function of causatives! We would be speculating and arguing only to support a theory based on recent not ancient facts.

f) Class 6 *tudādi,* the √*tud* 'thrust' and the rest take the marker -*á-* as in Class 1, but here in class 6 accented, on the unmodified root-stem, and then the endings: *tud-á-ti* 'one strikes, thrusts', √*kṣip* > *kṣipáti* 'throws', √*diś* > *diśáti* 'shows' etc. These dhātus have strengthening in certain persons of the perfect, the future and the causative (as with most dhātus of all classes).

In taking the affix -*á-*as its marker this class, the second most numerous, resembles the first class but the marker is accented here and the stem remains unmodified in the present and imperfect – unlike class 1 which has modified root-stem.

g) Class 7 is the most peculiar of all in that it takes an infix in the stem, then the endings after its final radical phoneme. This *rudhādi* class has the √*rudh* 'obstruct' and just over 20 more dhātus which take the infix *na* for strong persons and the -*n-* for the others: √*rudh* > *ru-ṇá-ddhi* 'one obstructs'

(<*ru+na-dh+ti*) due to rules of *sandhi* 'euphonic combination'; again, √*yuj* > *ju-nā=k(<j)-ti* 'joins, yokes' and √*piṣ* > *pi-nā-ṣ-ṭi* 'one crushes'. The marker *nā* is accented. In the unstrenghtened forms we find simply -*n*- as in *yu-ṅ-k-té* 'one joins for oneself' (middle voice) where the accent shifts to the termination.

Here we find corroboration from Latin *iu-n-g-o* 'yoke' and Gk ʒ*eug-nu-mi* 'yoke' This Gk **nu** is not the infix **na/n-** but a suffix found in other Gk verbs, like *deik-nu-mi* 'indicate'and we should note well that only Greek has this formation since other branches do not show it at all: S *diśáti*, Ossetic (=Persian) *äw-dis-yn*, L *dic-o*, Gm -*teih-an*/ʒ*eig-en* Hit *tekkus-āi*-.

h) Class 8 tanādi, the √*tan* 'stretch' and the rest take the affixes *o/u* (in parallel to *no/nu* exactly) but since all seven or eight dhātus end in -*n* they behave like those of class 5. Thus: *tan-ó-ti* 'one stretches', *tan-u-anti* > *tan-vánti* 'they stretch'; √*van* > *van-ó-ti* 'one wins', *van-u-thás* 'you two win (pres. dual).

At first sight these dhātus might as well belong to the 5th class. And most sanskritists do assign them there (e.g. MacDonell 1916). However, this is an error. First, the ancient Indian grammarians did not do so and they were not less observant or less intelligent than modern Western linguists. Moreover, they had much more material at their disposal than we do. Class 5 dhātus like √*su, śru, kṛ, dhū* etc have no noun-forms with *n* in the stem (except very rarely some late and questionable forms: Whitney 1885). But dhātus of the 8th class like √*tan*, and √*van* have *tán-a* 'offspring', *tán-aya* 'posterity, belonging to a family', *tán-tra* 'loom, principal part' etc, then *ván-as* 'longing', *van-i-tā* 'loved woman', *van-ús* 'eager' etc. Thus the dhātus and affixes **are** different. In the eighth class the -*n* belongs to the original dhātu.

However, as these dhātus are very few we can sidestep them. One example more or less will not make any difference to the main argument.

i) Class 9, *kry-ādi*, √*krī* 'buying' and the rest (over 60) take as their class marker accented *ná* in the usual strengthened persons, and unaccented *nī* (but *n* before endings with initial vowel) in the other persons and then the endings: e.g. *krī-ṇá-ti* 'one buys', *krī-ṇ-ánti* 'they buy'.

Here we can branch off and follow F. de Saussure (19th cent.) and other linguists who agree with him and evince admiration at the conclusion that these suffixes *nā/nī/n-* have been produced from the 7th signs, strong and weak infixes *na/n-*. So also in √*mī* > *mīnāti* 'one damages, lessens', *minītás* 'the two damage'; or √*bandh* > *badh-ná-ti* 'one binds', *badh-n-ánti* 'they bind' etc. A simplified description of the evolution of this pair of affixes from the 7th class ones is found in B. Fortson (2004: 75-6). But since no explanation is given by anybody for the lengthening of *na* to *nā* and n to *nī* and since the analytical reasoning seems highly specious, we hold such 'discoveries' totally unacceptable. Why would a rather simple people (and nomadic, as the mainstream theory goes) produce yet another class of verbs when the new signs *nā/nī/n-* have no apparent semantic difference? There does not seem to be any reason! We must also bear in mind another unexplained phenomenon, that is the fact that several of these verb-stems appear as full cognates in other IE branches. A good example found in several branches, not just Greek or Latin, is √*krī*, *krīnāti* itself: we find Gk *per-nu-mi* 'sell, export' (the *k/p* correspondence in S and Gk is not uncommon), O Ir *cre-n-aid* 'one buys' and O Rus *kre-n-ǝti*. Consequently we must accept that the *nā/nī/n* as marker of a class was present in PIE itself (and probably had a semantic function which we can no longer figure out). However, this point also does not affect substantially the argument.

j) There is a tenth class, √*cur* > *cor-aya-ti* 'steals' etc, but since it seems to be a secondary, derivative class (causatives, nominals etc) we can bypass it. Again it makes no difference to the argument.

10. The argument is that, contrary to what Hodge and others claim about suffixes being originally pronouns or other morphemes (or 'formatives') that came to be affixed onto the stems of verbs and so produced conjugation (§5), these affixes (suffixes, infixes and endings) were such formatives from the PIE period as far as one can see. For, surely, who can in all seriousness claim that these Sanskrit (and corresponding but unknown) PIE affixes were floating about in PIE and somehow got agglutinated to the stem which in some cases felt so swollen that it pushed out its initial phoneme in reduplication? Then, by what extraordinary process did the 7th class sign *na/n* wind its way into the root-stem? True, other languages display the similar phenomenon of having an infix inside the stem. S. Anderson gives two examples: in Chichasaw (Muskogean) a verb is made negative by the insertion of a glottal stop before the final (plus two other changes); in Palavan (Micronesian) the past tense sign is an infix as *menga* 'eat' and *m-il-enga* 'ate' (1985: 165-6). But, in the IE verbs we are examining, this *na/n* infix has no such semantic function that we know of!

However, first let us establish clearly the fact that most if not all the Sanskrit affixes we considered above, markers and endings, are PIE.

First, the suffixes *n/na/nā/nī/nu/no*. The distinctions are not at all apparent in other IE branches but the presence of *-n-* is indisputable. Take some examples: S √*yuj* (7th class) > *yu-n-a-k-ti* 'joins' appears in Gk as *zeug-n-u-mi* 'I join', L *iu-n-go* 'I yoke, join' and Lith *ju-n-kti* 'to join'; S √*str* (5th and 9th) > *str-n-o-ti* (*str-nā-ti*) 'strews, spreads' appears in Gk as *strō-n-nu-mi* (and *stor-n-u-mai*) 'spread, strew'; Alb *štri-n-j-*, L *ster-n-ere*, O Ir *ser-n-im* – all 'spread, strew'; S √*mī* (9th) > *mi-n-ā-ti* 'lessens' appears in Gk as *mi-n-u-(th)-ō*, L *mi-n-u-ere* (some see this as a simple root *min-* but then there is the affix *-u-*), Cornish *mi-n-ow* 'reduce' and Gm *min-s* 'less', Sl *mi-n-i-ji-* 'younger'. Thus at least one affixal form (*n/na/nu* or whatever) was operative in PIE.

Is there a pronoun or other morpheme resembling this suffix?

Well, yes there is the S enclitic *nau* 'we two' (=Gk *nōi*) for Acc, Dat, Gen; then *nas* 'of, to us' and L *nos* 'we, us'. But obviously these forms can have no relation, however distant, with the suffixes *na, nu* etc. There is also, as said above in (e) and (g), the S particle *nu*, Gk *nu(n)*, L *nunc*, all meaning 'now, indeed'; but this particle too does not appear in any way related to our suffixes. If we take the sense of 'now' we can claim that, yes, the suffix enters for the present stem. Against this, are the facts that the suffix enters for the imperfect also (I was, used to, did ...) and that only certain verbs took it; when these verbs are examined, they are seen to have little in common that would bring them together in a distinct (or several) category(s): *kṛṇoti* 'do, make', *yunakti* 'join', *mināti* 'lessen', *stṛṇāti* 'spread' etc.

Another consideration is that we find the suffixes *ā* accented and *a* unaccented and the *ya* unaccented (4th class). The affix *a* resembles the deprivative prefix *a-* (e.g. *á-ja* 'not-born', *á-yukta* 'not joined, yoked') and the prefix or preposition *ā* 'from, until', but, again, neither seems at all relevant. The relative *ya* 'who(ever)' certainly resembles the affix *-ya-* but does not seem to have the slightest semantic relevance. Here again, the 4th class verbs (e.g. *dív-ya-ti* 'plays', *mán-ya-ti* 'thinks', *śám-ya-ti* 'feels weary' and some 90 more) do not, as far as we know, have anything special in common to form this class. Then again, *-yá-* accented is also the sign for the passive and evidently has no relation to the pronoun *ya*.

This affix **ya** thus appears in 4th class stems without any (to us) obvious signification, to the passive voice and in the **aya** affix of the causatives and denominatives. Here again one could speculate and argue but only from recent, historical forms and conjectural forms with asterisks which may or may not have existed, not from ancient, primary

evidences (See, however, Diessel 1999 for an interesting view on morphology of demonstratives).

11. Then there is the reduplicating class – S *dá-dā-ti*, Gk *di-dō-si* 'he gives'. Reduplication is used also in the perfect: √*tud* (6th) > *tu-tod-a* 'one (has) hit, pushed'; L *cad-ō* 'fall' > *ce-cid-i*, *curr-ō* 'run' > *cucurri*; etc. We find in Gothic *stai-stant-* 'struck', *hai-hai-t* 'sowed'; etc. It is also found outside the IE family: e.g. in Egyptian (Afro-Asiatic family) *pt-pt* 'crush', *sn-sn* 'fraternize' and so on.

Surely nobody will seriously claim that this initial reduplication started with floating prepositions or other morphemes and because of their similarity with the stem got agglutinated to it.

In Egyptian we observe the repetition (otherwise 'gemination') of the entire stem: *sn* means 'brother', so 'brother-brother' → 'fraternize'. But in the IE languages and especially Sanskrit the reduplication is not quite so mechanical and gross. Apart from verbs of the reduplicating type (Gk *pi-pt-* 'fall', L *si-st-* 'stand', S *ji-jñā-* 'know' etc) we find that S has reduplication in the Desiderative conjugation which is the same (except some minor variations) for all classes: e.g. *ji-jīv-i-ṣet* 'let, may one wish to live' (opt). Also for some aorists like *á-cī-kṛṣ-am* 'I pulled, ploughed' and the Intensive conjugation like *cár-kṛṣ-ati* 'they pull, plough repeatedly'. While the last case (the Intensive) seems reasonable and somewhat resembles the Egyptian *sn-sn*, all the other cases present no clues whatever indicative of why they have reduplication.

Reduplication very obviously is a morphological and not a syntactical feature. What we don't know, as with so many other things pertaining to PIE and language in general, is the exact significance of the phenomenon.

12. Let us now examine affixes that are verbal terminations denoting person, mood, tense and aspect.

Take 3rd, indicative, present of 'to be': S *as-ti*, Gk *es-ti*, L *es-t*, Gm *is-t*, Sl *jes-tu* – all meaning 'one is'. The PIE ending

must have had *-ti* or at least *-t*. But apart from the S neuter *tad* 'that one' (and its cognates in the other branches), no other surviving independent pronoun comes anywhere near the ending.

The Gk neuter article is *to*, also phonetically close to *-t(i)*. But the masculine and feminine forms (e.g. S *sa/sā* and Gk *ho/hē*) are unrelated to the ending. In the Afro-Asian languages certain persons are distinguished by masculine and feminine endings alone since there are only these two genders: e.g. Hebrew: he remembered *zākhar*, she remembered *zākhərā(h)* where *-āh* is also a common ending for feminines (as also *-t* as in *ĕmēt* 'truth')³. Now, IE neuters in S, Gk, L etc are mostly inanimate things or states that would be used with stative (or intransitive) verbs – be, become, flow, lie (somewhere), grow up, perish, shine and so on. Active entities like the wind, fire, sea, storm, fury and the like are like men and women, gods and goddesses, either masculine or feminine. So active verbs would have, we should think, masculine or feminine pronouns as endings (as with Hebrew?). But while the Sanskrit/Greek etc 3rd person sing present is the same for masc/fem/neut, the endings for masculine and feminine nouns (Nom) are numerous and varied.

Let us take another example. The 1st plural is quite different: S *s-mas*, Gk *es-men*, L *su-mus*, Gm *sijum*, all 'we are'. Let us say the original was something like **mas/mes*. Here no 1st person plural pronoun comes near except perhaps Gk *hēmeis* (Attic) and *ammes* (Aeolic): the others are S *vayam* (and *nas*), Av *vaem*, Ht *wēs*, L *nos*, Gth *weis*. Yes, it could be that here Greek retained the original form which agglutinated to the stem after attrition (*ammes* > **mes*). But the terminations for the past tense are S *-ma*, Gk *-men*, Gm *-ma*, etc. Is it likely the Gk pronoun *ammes* suffered further attrition to generate these endings too? Possible but hardly probable. Because we

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³ There are still variant transliteration systems.

have the medio-passive endings now: S. -*mahe*, Tocharian *ämtär*, Gk -*metha* or the aorist S -*mahi*, Toch -*mte*, Gk -*metha*. It is rather too much to expect that a single pronoun – and this in Greek only and severely lamed – gave all these endings.

Let us take the 2nd singular: the independent pronoun for all genders is S *tvam* (enclitic *te*), Av *tu* (encl. *toi*), Ht *zik/tuk* (encl. *ta*), Arm *dow*, Gk *su/tu* (encl. *toi*), L *tu*, Sl *ty* (encl. *t.*) etc. The PIE corresponding verb ending is active present *-*si*, past *-*s*, mediopassive *-*se/ai/ther* (anyone or other variant). They are all phonetically unrelated to the pronouns. Here, we have some possibilities, of course. We can only speculate that the Gk *su* generated the second singular endings over the centuries. But since Greek has *tu* as well, the possibility of *su* is very remote and rather improbable; the *tu* agreeing with the other forms in so many other branches (tu, tvam, ty, dow etc) was most probably the original PIE – or a morpheme like it, with |*t*|. Then we do find endings phonetically related to *tu* (*thou* etc) but these (S. *tha-na*, Ht -*teni*, Gk -*tes*, L -*tis* etc) are of the second person plural. Again one may speculate and argue but only to move further away from simple facts.

We could examine other endings too (e.g. 3rd pl: S -*a(n)ti*, Gk -*ousi* etc) but we would find that there are no pronouns that could even remotely have a phonetic similarity and thus provide a basis for such endings.

13. There are, however, additional difficulties. Even if we allow the presence of all necessary dependent/enclitic pronouns, we must ask **how** they were suffixed to verbal stems after the non-semantic affix(es) *na, nu* or whatever. The IE people must have been quite numerous even when concentrated in one region and must have spread over a wide area judging by their later diffusion and the near certainty that at the time of the diffusion there already existed dialects (Burrow 1973).

They had no writing then, nor, presumably, a central "educational" authority that would dictate the "correct" type of speech, nor, of course, mass media to inform the people in

remote places of changes in language usages. Even if phonological change is, according to most comparativists, uniform (something wholly hypothetical and by no means proven since the phonological environment was not the same: see §1), nonetheless it is very difficult to envisage how such morphological changes would be established in a non-literate society. The two changes S/m → M/s mentioned earlier (§3, 4) in Hungarian and Coptic occurred in a highly literate society under the influence of a strong culture: Latin and Christian Europe for Hungarian and Greek and early Christianity for Coptic.

But before we state anything definite we must examine the noun also.

14. With the nouns too we find strong and weak cases: in the strong cases the accent falls on the stem. But let us bypass this aspect and deal with the case endings. We saw that in Hungarian various morphemes as post-positions coalesce with the stem then, in a reduced form, become case-endings (§3). Can we say the same for Sanskrit or, more accurately, for PIE?

The Sanskrit and the PIE endings for athematic nouns (f and m) coincide according to most (e.g. Fortson 2004: 103-5) at least in the Acc and Loc sing and Loc plural: these are -**m**, **-i** and **-su** respectively. These should provide adequate data. We note that, contrary to Hungarian, endings which often have two syllables and can be related to their original morphemes (some still independent nouns), these three (and all others in sing, dual and plu) are monosyllabic or even single-phoneme terminations which cannot be traced back to any obvious postpositional morphemes. There is no preposition or other morpheme in Sanskrit, Greek, Latin etc, that remotely resembles -*m*, -*i* and -*su* that might give these endings. Here certainly we could speculate and argue that a pronominal form of the first person, like S *mama/me* or Gk *me*, L *mei* etc (all 'mine, of me') could have supplied the ending **-m**. But the Acc sing is just as frequently constructed

with the other two persons in all three numbers. Again it is possible that the Gen sing of the first person somehow, sometime, stuck, but how probable is this?... I consider it most improbable because we have no other parallel with the other endings of that ancient period. Moreover, there is no relic in Sanskrit of the Acc sing alone without the possessive pronoun: 'I see my horse' *asvaṃ me paśyami*.

There is one morpheme that could be connected with an ending. S *abhí* 'to, towards' is phonetically similar to the Dat pl ending -bhyas (which in PIE is given as *-bhios); the Instr pl is -*bhis* and the Instr, Dat, Abl dual are *-*bhyām*. So here we can visualize abhi as postposition joining the stem of nouns in the sense of 'to, towards' and losing the initial -a and gaining a final *-s, *-as and *-ām* – as in *nāribhyas gáve* 'to women and to cattle'. But we have already met the difficulty of explaining the changes in phonology. **The other difficulty is that there is no trace of this *(a)bhi(-s/-as-ām) in the corresponding case-endings of the singular.** A third difficulty is that in Sanskrit from the earliest Vedic usage abhi is not post-positional but prefixed to (verbs and) nouns: *abhikrānti* 'the act of overpowering', *abhicāra* 'malevolent incantation', *abhidhāna* 'name', *abhibhū* 'one superior' etc etc. Moreover, there are semantic difficulties as well. The sense of the Ablative is also 'away from': thus *nāribhyas* in a different context could mean '(away) from' or 'more than, far above women'. Then, the Instrumental (-bhis in pl, -*bhyām* in dual) has no sense at all of 'to, towards'. This case has instrumental and associative meaning: thus *aśvíbhyām uṣásā* means 'together with the two Aśvins and Uṣas, the Dawn'. Here there is no semantic link at all with *abhi*. After all, Sanskrit (and presumably PIE) had other morphemes expressive of this sense – *saha, sākam* 'with, jointly, together (with)'. Yet another difficulty is the variation in the meaning of the cognates of *abhi* in the other IE branches: Gk *amphi* 'on both sides', L *amb-* and Gm *umbi* (Mdn *um*) 'around, round' etc. So again this agglutination seems remotely possible but extremely improbable.

15. The Accusative in the classical languages expresses the direct object which invariably, without the mediation of another party, receives directly the energy, impact or influence of the action of the subject, agent. Even if we supposed that at some distant past a movement towards the direct object was expressed by some adverb, preposition or postpositional morpheme, Sanskrit has *anu, abhi, -anta* and *-antika* (at end of compounds) and *prati*, but nothing that would yield *-m* (Acc sing) without wholly unacceptable violence. So this ending has no known or conjectural origin in floating morphemes. Greek *pros, epi, eis* and the like (and similarly Latin) are in no way related.

16. The endings *-i* (Loc. sing) and *-su* (Loc. plural) are just as unwilling to reveal their origination. There is, of course, Gk *en*, L *in*, Welsh *yn*, Armenian *i* etc, all meaning 'in' and it is possible that the original form joined stems and lost the *-n*, as in Armenian. The trouble is that although there are hundreds of compounds with *en/in* as initial both in Greek and Latin, there is no enclitic/postpositional attestation of it in Latin and the Oxford Greek Dictionary (1996) gives only one enclitic use in the epic poetry (*Odyssey* 1.50). Even if we accepted this solution, we still have to account for *-su* (Loc plural). Sanskrit has *antas* 'within' (Gk *entos*, L *inter*, Gm *untar* etc all 'among, in between') but, obviously, this cannot be connected at all with *su*; and the same difficulty has to be met with the dual locative *-os* (or whatever may have been the PIE ending).

The three endings *-m* (Acc. sing), *-i* (Loc. sing), *-su* (Loc. plural) do not derive from any known postpositional morphemes with independent existence. I have dealt with them because they are accepted by indoeuropeanists as the same endings in PIE. Personally, I do not care at all for PIE reconstructions and never use them. But, in this case, I do refer to all the PIE nominal endings saying that all of them consist of one syllable or simple phoneme, as given in various publications on Indoeuropean languages (e.g. Fortson 2004: 113; Clackson 2007: 97). I do not know if these are correct and, frankly, I have serious doubts about them, but neither for

these nor for Sanskrit, Greek and Latin endings, do I find any morphemes that appear within reason to have been the originals.

17. It is very significant that scholars who make or repeat such claims, or build upon them, do not provide any such evidence from the rich field of IE languages. Consequently statements that PIE inflections derive from postpositional morphemes (nouns, pronouns or adverbial forms) sound highly arbitrary and injudicious. As I wrote several times earlier one can speculate and argue (and we love doing this when in fact we do not know) projecting backwards to the PIE situation elements we glean from subsequent and modern linguistic processes and no doubt we are entitled to this. But clearly we are simply imposing our own (often theoretical) concepts. We simply do not know how language started and how it developed in these prehistoric times. Let me use an analogy: When standing on the North Pole, we can only move southward. Once we have taken a few steps, we can move in any direction we like, even northward. But these are subsequent possibilities. I would not accept modern claims for such remote events as the PIE. Unless solid evidence is provided, these claims shall remain nebulous assumptions.

What then is the origin of the Sanskrit complex morphology (and of course PIE which must have been even more composite, subtle, elastic and expressive)? I don't know. Frankly, I don't think anybody knows for certain. Obviously, suffixes and infixes like *nu/no, ya* etc had a function other than merely marking the morphological class (afterall, why have these classes?) but this is no longer known. There are many conjectures, many hypotheses, many theories. These are obviously connected to rather superficial views about man's origin based on (neo-) Darwinian theories of evolution, which lack any solid proof (and, indeed, are seriously doubted by biologists and geneticists like Behe 1996, 2004, Brooks 2001, Denton 1985, Lipton 2005, Paquette et al 2003, etc).

18. There are many theories regarding Language, dialects, linguistic development, changes in sound or morphology and so on. Grammarians of the 19th century like A. Schleicher or his opponent H. Schuchardt, influenced no doubt by Darwin's Theory of Evolution, thought that languages are natural organisms that are born, grow up and develop according to constant laws then grow old and die. Although this is untrue, many writers even nowadays seem to think that languages change because of the operation of unseen natural or metaphysical laws: e.g. "The only constancy of language is that it is always changing ... We may expect that the amount of change will be partly dependent on the extent of time that has elapsed in the linguistic continuum ... linguistic differentiation is a product of time" (Mallory 1989; 22, 23, 152). Some write (or speak) plainly of an evolutionary process connecting with (Neo-) Darwinism (like Ritt's 2004 *Selfish Sounds ... A Darwinian Approach to Language*; also Croft 2000). Fortunately others approach the issue with more pragmatism, like W. Labou: "it appears that the process of sound change is not an autonomous movement within the confines of a linguistic system, but rather a complex response to many aspects of human behaviour" (1984:163).

It should be clear that a language is organic in that it has interconnected organs but it is not a biological organism like a plant or an animal and has nothing to do with natural evolution. It is not born, it does not grow old and does not die. All the so called 'dead' languages are languages that are simply no longer used: that is all. Language is primarily a mental and emotional phenomenon expressed in gross sounds (and writing) as is done here now. All linguistic change, morphological, phonetic, semantic or whatever (wrongly termed "evolution") results from human action (as said in §1) which consists in deliberate interventions or in mere side-effects. Sometimes it is the action of a great grammarian like Pāṇini or other wise sages in ancient India or ancient Egypt, Palestine, etc; sometimes it is that of a great poet like Chaucer in England or Dante in Italy; sometimes in

modern periods that of a government. The plain fact is that nobody has ever seen or heard of the origin of any language: we have all been born within a current linguistic context and however back we go in documented human history language is always there in one form or another. Its origin is really unknown: we have only ancient writings of Revelation (in the East and in the West) that ascribe its origin to God.

The Vedic sages who left us much wisdom commented on the language also. One hymn assigned to Aucathya Dīrghatamas in the *Ṛgveda*, probably the oldest document of humanity, says: *catvā́ri vā́k párimitā padā́ni, tā́ni vidur bhāhmaṇā́ ye maṇīṣíṇaḥ; gúhā trī́ṇi níhitā neṅgayanti, turī́yaṃ vācó manuṣyā́ vadanti* (1.164.45) – 'Speech is measured out in four quarters; perspicacious Brahmins (=holy men) know these: three placed within, secret, do not cause movement; the fourth one men speak'. Much else was said, analysed and categorised, in the course of time. A philosopher-linguist, Bhartṛhari of c 300 CE, explicated in his *Vākyapadīya* the four quarters as *parā* 'Supreme Source, indescribable', *paśyantī* 'looking on (emotional wordless knowledge)', *madhyamā* 'subtle (thinking in mind)' and *vaikharī* 'gross ordinary speech'. It would seem that only if one reached the level of *parā* one would know all about language; even with *paśyantī* one would understand far more. But such study would require yogic, philosophical, metaphysical or esoteric practices that very few scholars wish to undertake.

My own view, if I must express one, is that language did not start with grunts, hisses and warbles as most think (e.g. Hawkins & Gell-Man 1992) but, as Dixon writes, with "an explosion". He finds no evidence of a "primitive language" with just a few hundreds words and only a little grammar (1997: 65); a similar view has been enunciated by D. Bickerton (1990) and N. Chomsky (1986). The presence of dhātus in Sanskrit and the simple mechanisms of their varied development into nominal declensions and verbal

conjugations indicate that there was design at the very start with dhātus and terminations. I would go a little further than Dixon and say that language arose in primitive man's mind in its fullest and most complex morphology just as Athena sprang out of Zeus' temple in full panoply. And this would be the levels of *parā* and *paśyanti*, mentioned above. This need not seem far-fetched. Most animals show a capacity to fashion a nest/lair, to care for their young teaching them to hunt on land, in water and in air and to communicate to some degree. Such behaviour betokens some intelligence. Many plants also exhibit signs of intelligence. Considering the vastly greater intelligence of humans, we should not be too surprised at the sudden outburst of a rich, fully inflected language. This of course cannot be proven except one reaches back to that original state and sees how it all started.

7. Archaic Greece and the Veda

I) Introduction

Many studies by classicists (=scholars of Greek) have since the 1960s (and some before) drawn attention to affinities between the archaic Greek culture and Near Eastern (NE hereafter) ones in religion, mythology, poetry and arts and crafts: e.g. P. Walcot (1966), M L West (1966, 1978, 1988, 1997a, 1997b etc.), W. Burkert[1] (1977, 1987, 1992 etc.), C. Penglase (1994), orientalist S. Dalley (1998) and many others. Except West, who invariably refers to early Indic sources as well, most of the others seem to be unaware of any affinities between the Greek and Indic cultures and play down the fact that the Greeks who came in waves onto the shores of the Aegean (from about the middle of the third millennium down to about 1200 BC) were undoubtedly people who spoke an Indo-European (IE hereafter) language and therefore most probably brought with them a

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[1] For economy of space are used abbreviations for some texts and books given in the Bibliography in full. Thus B with number stands for Burkert 1992 and page-number throughout; MM for Dalley 1991; GM for Graves 1960. *AV* is *Atharvaveda* and *RV Ṛgveda*; *AB* and *ŚB* are *Aitareya* and *Śatapatha* Brāhmaṇas; *B Up* and *ChUp* are *Bṛhadāraṇyaka* and *Chāndogya* Upanishads; *TS* is *Taittirīya Saṃhitā*; *MB* is *Mahābhārata* and *Ra Rāmāyaṇa*.

Apart from the usual signs < 'derived from ' and > 'producing' for convenience I use the sign **z** in the sense 'is cognate, connected with'.

Greek texts in the original and in translation have appeared in many editions, as with Homer's *Iliad* and *Odyssey*. For Hesiod and the Homeric Hymns see *Loeb* in Bibliography.

large amount of inherited forms pertaining to all aspects of life. A fair proportion of these forms (only few names of deities in the Mycenaean extant documents) appear in the archaic texts (Homer and Hesiod) and survive as established elements in the Greek civilisation of later periods. The above-mentioned classicists are certainly right in establishing Greek parallels with, and borrowings from, the NE traditions, but they are just as certainly wrong to ignore the Greek affinities with the Vedic culture and with that of other IE peoples, and ascribe – as they do – such elements also to NE influences. No doubt many elements in the Greek culture[2] derive from, or at any rate were common with, those of the Near East. Contacts between Minoan Crete and Syria and Egypt or other NE countries are in clear evidence from about the late 3rd millennium (Hood 2000) and exchanges of goods, patterns and techniques early in the second (Warren 2000: 26-8); there may have been religious influences from Egypt c 1990 (Carinci 2000: 32-4) and certainly soon after the Egyptian hippopotamus-goddess Taweret was adopted in Crete with minor transformations in the extant iconography (Weingarten 2000: 114-5, 118); undoubtedly there are similarities in cult much earlier between Minoans and Anatolians (Çatal Hüyük) due to contacts, exchanges, perhaps even migrations from Anatolia (Dietrich 1974: chapters 1, 2). Such contacts, exchanges and transmissions continued in the Mycenaean and subsequent periods so that S. Dalley can say "There was not simply one 'orientalising' period, there were several" (1998: 86)[3] . However, Dalley is

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[2] This will hereafter indicate the archaic period, that is 8th and 7th centuries, otherwise the era will be specified as post-archaic, classical or Hellenistic. The dates given are of course BC.

[3] The term 'orientalising' is something of a misnomer. It does not really mean that Greek culture acquired 'oriental' features (except in Hellenistic times, i.e. after 300). Greeks borrowed much material from the Near East but in almost all instances transformed this into distinctly Greek forms. As Plato(?) wrote in *Epinomis* 987 D-E, "The Greeks render more beautiful whatever they obtain from foreigners".

quite probably wrong in suggesting that the art of bird-augury (as attested in a Greek inscription of the 6th century) derives from Mesopotamia (1998: 100) – the two texts quoted from Greece and Mesopotamia being quite different, anyway[4]. This kind of divination is amply attested in the very earliest Vedic culture and west of Greece, among the Celts (MacCulloch 1948: 55-6). Now, while it is possible that this art of divination spread from Mesopotamia westward to Greece and Gaul, it is equally possible that the Celts, Greeks and Indo-Aryans inherited this practice from the Proto-Indo-European (PIE hereafter) phase.

In this paper I trace parallels between the Greek culture and the Vedic tradition, referring to other IE peoples and using philological considerations wherever possible. Wherever we find Greek-Vedic parallels, these are very probably inherited forms, since it is unlikely that Greeks and IndoAryans had, after the dispersal of the IE peoples in the 3rd or 4th millennium or before, contacts of any great significance. The area of Mythology has been extensively explored since the 19th century of our Era by Max Müller, Cox, Fisko, Oldenberg, Hillebrandt, et al (for a useful brief summary see Arora 1981: 177 and n 1) and of course by many more scholars in the 20th century (Dumézil, Polomé, Puhvel, et al). I do not think that the exploration of Comparative Mythology has been exhausted, nor that a full and correct evaluation of the relationship between the different IE traditions has been established despite the various tripartite, structuralist and other approaches to this subject – and I hope to show the reason for this in the course of this discussion. I shall not examine mythological themes and motifs like the Deluge or the Four Ages (in India) or Five (in Greece), nor cognations like *Zeus/Dyaus, Ouranos/*

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[4] The Greek text: "If (a particular bird) flying from right to left disappears from view, (the omen is) favourable ... If, flying from left to right, it disappears in a straight course, unfavourable." The Mesopotamian text: "If many eagles keep flying over a city, the city will be besieged".

Varuṇa etc., that have been repeatedly discussed. However, in addition to circumstantial mythological motifs, I shall examine parallels in social practices, rituals and magic, in the broadest sense of the term.[5] For instance, Cheiron's school on mount Pelion where many heroes like Achilles received their education sounds very much like an old Druidic or Vedic school (today known as 'ashram' <[1] *āśrama*) where the tradition was oral; very different were the NE traditions of education and learning where writing was predominant and the teaching, apart from the master-apprentice relationship in Egypt (Aldred 1984: 192-5) and elsewhere, was conducted in schools that were royal establishments or connected to temples (Saggs 1989: 100, 105).

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[5] Indic sources used here will be mainly the hymns of the *Ṛgveda* and *Atharvaveda* and to a lesser extent the Brāhmaṇas, Upanishads and the Nirukta; on few occasions I have recourse to the Sūtras and the epics, *Mahābhārata* and *Rāmāyaṇa* (*MB* and *Ra* hereafter).

The mainstream academic opinion on the dates of ancient Indian texts is that after the Aryans entered NorthWestern India c 1500, they composed the *RV* c 1200-1000 (or even later), the *AV* c 1000, the Brāhmaṇas and Upanishads c 800-600, the Sūtras 600 BC and after and the epics (in their present form) right down to c 300 CE. In the last decade of the 20th century some Sankritists in the West have raised questions and objections to the mainstream view. Prof Aklujkar (British Columbia, Canada) does not consider the dates incontestable and states "only relative chronology has been well argued for" (1996: 66 and n 14); see also Feuerstein et al 1995, passim. Having accepted and taught the mainstream theory for some 20 years, I too abandoned it in view of the mounting evidence against it. I presented the full evidence in 'The Ṛgveda and Indo-Europeans' (1999) and in other publications (2009, 2003, 2002), positing 3100 BC as the completion of the RV. Only a brief summary can be given here.

The Indo-Aryans are indigenous to the Seven-river region in what is today North Pakistan and N-West India, since there is no evidence whatever for any intrusion into the area prior to c 600 BC. (Allchins 1997: 191, 222; Shaffer and Lichtenstein 1995: 135). The RV was complete but for minor passages by 3100 when the Harappan culture begins to arise. The Brāhmaṇas and Sūtras know of town-life, large buildings, fixed altars, bricks, cotton, rice and silver – elements present in the Harappan culture but unknown in the RV. Moreover, many hymns in the RV (especially II, 41; VI, 61; VII, 95) praise the Sarasvatī river which flows mightily from the

II) Oral tradition (and literacy).

In my view the most important feature shared by the Indo-Aryans and the Greeks, i.e. the Mycenaeans and subsequent IE-speaking entrants, is the oral tradition. The Minoan civilisation (non-IE) was literate but its few written documents have not been deciphered as yet. Literacy was present also in the Mycenaean period, though limited to palaces and temples, and the language was IE, as revealed by the decipherment of Linear B (Ventris & Chadwick 1973). There followed 300 years of non-literacy after the

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mountains to the Indian ocean, but c 2000 had become a minor stream lost in the desert, hundreds of miles before reaching the ocean. In addition, linguistic and literary evidence shows that Vedic is far older than any other IE branch, including Hittite or Avestan.

Consequently I take it that *RV* was composed in the 4th millennium at least, the Brāhmaṇas and Upanishads early in the 3rd and some of the Sūtra texts c 2500 BC. The Rāma legend is older than the great war of the *Mahābhārata*. The core of both must have been in circulation in epic narrative in the 3rd millennium (Rāma tales much earlier) but was expanded by the bards with much additional material reaching the subsequent enormous length early in the Christian Era.

Of great significance are two articles by American historian of science A. Seidenberg wherein he argues that Egyptian, Babylonian and Greek Mathematics derive from the Indic *Śulbasūtras* of Āpastamba and Baudhāyana, or a work like that, dated at c 2000 BC as lower limit, thus furnishing totally independent evidence: in these he took account of the work of Neugebauer, Cantor et al (see Bibliography). Seidenberg wrote of this original work: "its mathematics was very much like what we see in the *Sulvasutras* [*śulbasūtras*]. In the first place, it was associated with ritual. Second, there was no dichotomy between number and magnitude ... In geometry it knew the Theorem of Pythagoras and how to convert a rectangle into a square. It knew the isosceles trapezoid and how to compute its area ... [and] some number theory centered on the existence of Pythagorean triplets ... [and how] to compute a square root. ... The arithmetical tendencies here encountered [i.e. in the *Śulbasūtras*] were expanded and in connection with observations on the rectangle led to Babylonian mathematics. A contrary tendency, namely, a concern for exactness of thought ... together with a recognition that arithmetic methods are not exact, led to Pythagorean mathematics. (1978: 329)

destruction of the Mycenaean centres of culture from the 12th to the early 8th century (Taylour 1983: 41), usually termed 'Dark Age' and then literacy re-emerged with the adoption by the Greeks of the Phoenician alphabet and its transformation with the introduction of written symbols for vowels and separate symbols for consonants. But it is doubtful whether the Proto-Greeks who first established themselves on the shores of the Aegean c 1900 were literate. The later writing is syllabic, resembling other NE types. It is safe to assume that they brought no writing with them and eventually, in the 16th or 15th century, adopted the Cypriot-Minoan mode of writing.

It is very difficult to know exactly what the Proto-Greeks brought with them from the PIE stock. The clay tablets discovered at Knossos and other spots on Crete and at Pylos, Mycenae and other places on the mainland (=Mycenaean Documents) are mainly inventories, containing no literature and very little information about religion. However, among sporadic references to votive offerings, some names of deities stand out, easily recognizable as IE. Thus we find **Zeus** (V *dyaus*, Ht ^{D}*Siu-s,* Rm *Ju[s]-piter*, Gm *Tiwaz*); **Areimene** (V *Aryaman*, Clt *Ariomanus* in Gaul and *Eremon* in Ireland); **Iqej-a/-o**, names for a Horse-god/-goddess (Dietrich 1974: 176, n 246: Chadwick 1976: 93) connected obviously with V *Aśvin* and Clt *Epona*, a horse-deity in Gaul; **Erinus** is obviously connected with Demeter Erinys of Arcadia, rather than the dreadful Furies (Burkert 1977: 85), and with V *Saraṇyū* [6]; a goddess **Diwija** S *divija* 'skyborn' or S *divya* 'celestial'; Burkert gives also *Alle Götter* 'All gods' (1977: 83) which is Mcn *pa-si te-oi* (Ventris & Chadwick,

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[6] The *saraṇyu/erīnus* cognation is rejected by KEWA III, 442 (as also in Frisk 1954 ff). However, since KEWA accepts the S/Gk cognations – *sama/ a mo-then, sarva/b olo-/bo ulo-, sarpami/be rpō si-sarmi/ba llomai and ia llō* and sarpis/*e lpos-e lphos* (all in vol III), there can be no reason, phonetic or semantic, for the rejection of *saraṇyu/erinus*; non-initial S -*a*- often appears as -*i*- in Gk as in *dadāmi/didōmi*.

p 310) and clearly V *viśve-devāḥ-* 'all gods'. Thus we have some evidence that the Mycenaeans preserved elements of their IE heritage and this through oral tradition. This tradition continued during the subsequent centuries of non-literacy; for, apart from Zeus and Erinys, the names of Hera and Athena, and several other deities re-emerged in the poetry of Homer and Hesiod in the late 8th century. (For continuity and innovation in archaic Greek religion see Dietrich 1974: 246ff and Burkert 1977: 99ff.)

In the 12th century, it is thought, the Dorian tribes, another IE-speaking people, swept through northern Greece, spread and eventually some of them reached and settled in the Peloponnese (Taylour 1983: 16, 162). No writing is attested anywhere in Greece until c 800 and, when written records appeared in the 8th century, only few of the older Mycenaean cultural elements survived in the beginnings of what is regarded as the Greek civilisation, culminating in the brilliance of the classical period.

It may be thought that with the advent of writing the oral tradition ceased, but this is not so. Many examples are attested down to classical times pertaining to 'esoteric' knowledge, through the teacher-disciple and father-son relationship, in religion and priestly functions, healing, divination, and the like (B 43ff). At the time of Euripides, when literacy was widespread (Murray 1993: 100), one of the characters in Melanippe the Wise says "How sky and earth separated is not my tale but one from my mother" (frag 484_[7]) thus showing that cosmogonical or theogonic accounts still passed from one generation to the next by word of mouth. P. Kingsley again stresses how oral transmission in esoteric cults like the Crphics, Pythagoreans and others persisted into Hellenistic and even Roman times (1995: 322ff).

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[7] For fragmentary works of Euripides see T B L Webster's *The Tragedies of Euripides*, London 1967.

Now while classicists like Burkert link this oral transmission with diviners, healers and the like in NE cultures (B,[1] 44-5), this is a pre-eminent feature of early IE as well. It is attested among the Celts, as Caesar writes in *De Bello Gallico* VI, 13: "[The Druids] are concerned with divine worship ... sacrifices ... ritual ... Numerous young men gather round them for the sake of instruction holding them in great honour"; in ch VI, 14 he adds, "In the schools of the Druids they learn by heart a great number of verses, and therefore some persons remain twenty years under training. And they do not think it proper to commit these utterances to writing, although in almost all other matters ... they make use of Greek letters". The Germanic and Baltic peoples also must have had an oral tradition, even though it is not so clearly attested, or so retentive, otherwise they would not have preserved respectively the deities Fjorgyn and Perkunas, which z Sl Perun (and variants) and V Parjanya; much of the IE common lexical stock; and IE legends, like Thor's confrontation with the serpent Midgard in the ocean (Gm) and the songs about *Dieva Deli* (Ltv; or *Dievo Sūnelai* Lith) 'the [Sky-] god's sons' and the Sun's daughter (*Saules meita* Ltv or *Saules dukterȳs* Lith) this Baltic legend corresponding in part to the Greek *Dioskouroi* 'sons of Zeus' and Vedic *Aśvinau* who accompany *Sūryā* 'Sungod's daughter' (or *Uṣas*). It should be noted here that there is no direct parallel between the Greek and Baltic legends beyond 'skygod's lads'. The Greek legend has two pairs of twins, Castor (one Dioskouros) and Klytaemnēstra (Agamemnon's wife), and Polydeukes (second Dioskouros) and beautiful Helen (of Troy, i.e. Menelaos' wife) while the two Dioskouroi are expert horsemen and rescue people from shipwrecks ("Hymn to Dioskouroi' in Loeb, 460-2; *GM* I, 245-50); the Baltic legend has sometimes one, sometimes two or many, Skygod's sons who woo the Sun's daughter and save her from drowning (Ward, 414-5; Puhvel 228-9). The link between Greek and Baltic is furnished by the Vedic lore

about the Aśvin horsemen (one set of twins of Saraṇyū and Vivasvat in *RV* X, 17, 1-2 & *Nirukta* XII, 10) who are healers and rescuers (often from shipwreck) and thus are connected with Dioskouroi, and who accompany the Sungod's daughter Sūryā (and in *RV* VI, 60, 2, rescue abducted Uṣas, who is sometimes identified with Sūryā), and thus are connected with the Baltic heroes. Although, the Slavs and the Romans had no myth of the Divine Twins, they must have had a similar mode of oral transmission.

In the Vedic culture the oral tradition is very marked. The Vedic texts preserved much more of the PIE stock of legendry than any other IE branch. In fact no major mythological feature appears in two or more IE branches to the exclusion of the Vedic one, while, on the contrary, feature after feature appears in the Vedic lore in common with one or two other branches to the exclusion of the rest (disregarding the affinities of Vedic and Avestan since these two traditions formed a distinct branch). Thus the motif of the sacrificial dismemberment of primordial Man *Puruṣa* and the resultant cosmogony (*RV* X, 10) has a parallel in the dismemberment of giant Ymir (z V *yama*) in the Norse tradition but nowhere else; the name of Vedic Firegod *Agni* appears only as the Slavic *Ogon* (and variants) and nowhere else; the name of V artificers *Ṛbhu* is most probably cognate with Gk *Orpheus* and Gm *Elf* but has no mythological connection in the other branches; the same holds for V *Vāstoṣ-pati* and Gk *Hestia* and Rm *Vesta*; and so on. Thus the Vedic corpus seems to be a much more reliable source for PIE mythology than any other IE branch. This is all the more remarkable when one considers that the Vedic texts were transmitted for many centuries through a well organised oral tradition.

The systematic oral transmission of its voluminous sacred lore (and sacrificial ritual) is a most impressive characteristic of the Vedic tradition. The priestly caste of the brahmins guarded well the knowledge of their *śruti* (apocalyptic

scriptures like the *Rgveda*). It was the sacred duty of certain families to transmit this knowledge from one generation to the next (Winternitz 1981: vol I, 29-32, 51-2). When the disciples reached maturity and the teacher felt they could now proceed on their own he instructed them "learn and teach" (*Ch Up*[1] IV, 9, 3 & VI, 14, 2; T *Up* I, 9, 1ff). The teacher-disciple and inter-family father-son relationship is exemplified in the Upanishads: "A father may declare this [teaching about] Brahman to the eldest son or to a worthy pupil" (*Ch Up* III, 11, 5); later on (VI, 8ff) Uddalaka is presented instructing his son Śvetaketu. Already, in the *RV* itself we read of the families of Bhṛgus, Aṅgirases, Vasiṣṭhas et al, who preserved and transmitted the sacred knowledge.

III) Epic Poetry

1. "Greek literature is a Near Eastern literature" wrote West in the introduction of his edition of Hesiod's *Theogony* (1997: 31). The statement is probably exaggerated for effect, but other scholars express a similar view in more moderate terms (B 88ff; Dalley 1998: 101-3). Undoubtedly, many incidents and features from NE poetry are embedded in the Homeric epics (and other poems of the archaic period). Here, I present only a few of them to indicate this particular debt: in *Iliad* 15, 187ff Poseidon describes how the world was divided among the three sons of Rhea, the three high gods, Zeus, Hades and Podeidon himself, *by lots*, a procedure otherwise unknown in the Greek texts but present early on in the Babylonian epic *Atrahasis* (*MM* p9); Penelope's prayer after her son Telemachus' departure in *Odyssey* 4, 759ff, could well derive from a similar incident in the Mesopotamian epic *Gilgamesh* (Tablet III: *MM* p 65), where the hero's mother Ninsun offers a prayer after her son's departure; also in *Gilgamesh* we find that sometimes the action of a new day begins with the first light of dawn (Tablet VIII, *MM* pp 91, 95) and this is employed by Homer in the *Odyssey* (opening of rhapsodies 2, 5 etc.); there are

several more cases. However, apart from very few incidents, like Penelope's prayer which seems to have something non-Greek about it (B 1992: 99-100), it should be and has been noted that most such borrowings (like also the Phoenician alphabet mentioned above) are usually transformed by the Greeks into terms of their own culture (see n 3, above).

Despite all such borrowings, Greek epic poetry has its roots in the PIE tradition as is evidenced by some basic features it has in common with the poetry of the *Ṛgveda*, even though the latter is not an epic. It is difficult to understand what scholars mean when they write of "Indo-European heroic tradition", since apart from Homer's works there are no other IE epics until very much later. The Hittites (also IE) left us some epics, which were written down eight or nine centuries before Homer's poems but are almost indistinguishable from NE poetry. The Romans produced poetry several centuries after the Greeks and mostly imitated them. For the other IE branches, Germanic, Celtic, Slavonic and Baltic, we find no written material until after many centuries of the Common Era. Consequently the only comparisons that can be made in this context are with the *RV* hymns. We therefore ignore studies on (hypothetical) IE epics or "IE poetics". Besides, features common to, say, Greek and Germanic heroic poetry are found also in the medieval Turkic *Alpamysh* or the ancient NE *Gilgamesh*.

2. In the Homeric epic we find, broadly speaking, *three types of stock epithet* (the examples are mostly from *Iliad* 1): a) Vague adjectives like *dios* 'divine, bright', used of anyone, or *diogenēs* 'nobly born' of many heroes; these are employed mainly for filling the metrical line. Others are *amumōn* 'fault-less', *megathumos* 'big-hearted' and *hippodamos* 'horse-taming' – all used indiscriminately of Trojans and Achaeans; *potnia* 'reverend' used of Hera and elder women and *kallisphuros* 'with beautiful ankles' of any beautiful lady; and so on. b) The second type of epithet is

used specifically of a central figure and denotes a distinct feature but could apply to many others: e.g. Hera 'of white hands' *leukōlenos*; Athena 'of grey/blue eyes' *glaukōpis*; Dawn 'of rosy-fingers' *rhododaktulos*; Acheans 'of fine greeves' *euknēmis*; etc. c) The third type is used exclusively of a particular deity or warrior and denotes a feature that designates a specific attribute or function not found in another figure: e.g. *hekēbolos* 'aim-attainer/far-shooting' is exclusive to Apollo; *asteropētēs* 'who throws the bolt' and *nephelēgereta* 'cloud-gatherer' are exclusive to Zeus; *polumētis* 'of many counsels' and *polumēchanos* 'of many devices' are used of Odysseus; the epithet *pódas ōkus* 'fleet of foot' is used mainly of Achilles; though *ōku-* and *tachu-* are used of others too.

All three categories are found in the Rgveda – even though it is a collection of hymns to gods and not an epic: a) *daivya* 'bright, divine' of Savitr (I, 35, 5) and Rudra (II, 33, 7); *ugra* 'mighty, fierce' of Rudra (II, 33, 9) and of a man of power (X, 34, 8); *ṛtavan* 'holy, observing order' of Divine Waters (II, 35, 8) and of Mitra and Varuṇa (VII, 61, 2); *citraśravas* 'of brilliant fame' of the Firegod Agni (I, 1, 5) and of Mitra (III, 59, 4). b) *somapā* 'soma-drinker' is exclusive to Indra (e.g. II, 12, 13), but it could be used of any other god; Rudra is called *jalāṣa* 'cooling', but so could be the Moongod Soma, the Raingod Parjanya and others; Agni alone is described as *jātavedas* 'who knows all things manifest' but so could be Varuṇa or the Sungod who see all things. c) Agni is *gṛhapati* 'lord of the house' (I, 45, 1) since a fire is always lit, and *daivya hotṛ* 'heavenly priest' (III, 7, 8 and 9); *vajrin* 'he of the bolt' (VII, 49, 1) is an epithet exclusive to Indra; Viṣṇu is famous as *urugaya* 'far-going' and *urukrama* 'wide-striding' (I, 154, 3, 5, 6); and so on. That Greek epic had a rich inheritance of epithets is made even clearer by its common lexical stock with Vedic : S *śravas/śruta* z Gk *kleos/kluto-* 'fame(-d)'; S *uru-* z Gk *euru-* 'wide-'; S *āsu* z Gk *ōku-* 'swift'; S *divya/daivya* z Gk *dios* 'divine, celestial, bright';

S *patnī* Gk *potnia* 'reverend lady'. (For additional "verbal as well as conceptual parallels," West, 1988: 154-6. also Kirk ed, *The Iliad, a Commentary* 1985-93, vol 3, p 117, on 'glory' and 'undying.'; also Kazanas herein ch. 3)

3. The *similes* in the N/E epics are not numerous but varied as in "His face was like that of a long-distance traveller" (*Gilgamesh, MM* 53) or "To go on to the battlefield is as good as a festival for young men" (*Erra and Ishum, MM* 287) and "splendour like the stars of heaven" (ibid, 290). The *RV* contains a large variety of similes: simple ones as in "[Rudra] kills like a terrifying beast" (II, 33, 11); a humorous comparison in "[Frogs] like brahmins at the overnight Soma-sacrifice, speaking around as it were a full lake" (VII, 103, 7); lyrical and elegiac in "As a mother covers her son with a robe, so shroud thou, o Earth, this [dead] man" (X, 18, 11); elliptic and pregnant in "As a cunning gambler carries off the stakes, so the goddess [Dawn] wears away a mortal's lifespan" (I, 92, 10); and one almost Homeric – "Like the rays of the sun that make men hasten, exhilarate, then send to sleep, so flow forth together [Soma's] swift effusions ..." (IX, 69, 6). The Greeks may have retained similes (and idioms) from the PIE phase but even if parallels could be established between Greek and Vedic (or Avestan) these could equally well be due to independent development, since the movements during the centuries after the dispersal and the settlement in new environments would naturally produce new usages. So in this area, what is of importance is the continued use of similes, not so much verbal and conceptual parallels which may be fortuitous.

4. An additional aspect of style is that the *RV* Hymns are composed in various fairly *strict metres* (Anuṣṭubh, Jagatī, Triṣṭtubh, etc.), as the Greek epic line has its own strict metre (the hexameter with its iambic, trochaic, dactylic and other variants), whereas the Mesopotamian epic has only one metrical feature, that of the accent usually resting on the penultimate syllable of the line (Heidel 1965: 15-6).

Moreover, we find in the Hymns alliteration and assonance:
... *prasasré apsú; sá pīyúṣaṃ- dhayati pūrvasūnām* 'he has
stretched forth in the water; he sucks the new milk of them
that first have given birth' (II, 35, 5); *tvám agne
vājasátamaṃ víprā vardhanti súṣṭutam* 'Wise singers exalt
you, Agni, well-praised, best giver of gain!' (V, 13, 5);
*sá dundudhe sajúr índreṇa devaír dūrád dávīyo ápa sedha
śatrkūn* 'O drum, along with Indra and the gods, do drive our
foes to farthest distance' (VI, 47, 29). Thus it is as though the
metrical line foreshadows Greek poetry and the alliteration
foreshadows the alliterative poetry of the Germanic
peoples. The riddle is another feature common to the Hymns
and Germanic poetry: e.g. *tigmám éko bibharti hasta
áyudham, śúcir ugró jálāṣabheṣajaḥ//* ... *trīṇy-éka urugāyó
vi cakrame yátra devá so madanti //* (*RV* VIII, 29, 5 and 7):
'One, bright, fierce, with cooling remedies, carries in his
hand a sharp weapon' (5) where the "cooling remedies"
signal Rudra; 'One far-going, has made three strides to
where the gods rejoice' (7) where "far-going" and "three
strides" signal Viṣṇu.

Many more details of form, style and specific poetic
devices will be found in C. Watkins

2001 (1995) *passim..* (also Kazanas herein ch.3) Watkins'
study is invaluable for any student of IE comparative
literature, but, unfortunately it contains many parallels that
are not parallels and many that are universal (or independent
developments) and not specifically IE inherited forms (21-2,
25, 31, 38, 53, 99, etc. etc.). It also takes for granted the
notion common among comparativists that all traditions, Vedic,
Hittite, Greek, Celtic, Slavic, etc. stand on the same footing,
even though the Hittite one is heavily influenced by the NE
cultures (this is admitted on p 52), while Celtic and, moreso,
Slavic literary traditions, which are of late attestation, may well
carry elements diffused from Greece and Rome – a point
outside the framework of our present discussion.
Nonetheless, Watkins does state: – "The language of India

from its earliest documentation *in the Rig-Veda has raised the art of the phonetic figure to what many would consider its highest form" (p 109).*

Note. Earlier, in section II, we saw that the legend of the Aśvins in the *RV* provides information that connects the Greek *Dioskouroi* and Lithuanian *Dievo Sūnelai. Here we see that the RV* can be said to anticipate both Greek poetic metre and Germanic alliterative poetry: it alone preserves what most probably were common original elements in the PIE but got separated in the other branches.

5. There are in addition several *incidents* in Homer which have parallels in the Veda and can thus be regarded as PIE inherited forms, despite similarities in NE texts. We examine only three of them here.

In *Iliad* 15, 34-42, Hera swears the oath to the river Styx, which is regarded as the most severe and weighty oath by the gods (as it is also in Hesiod's *Theogony* 401ff). In this instance it has cosmic dimensions being accompanied by Heaven and Earth, and Burkert links it with a parallel in Aramaic (1992: 93-4). However, this is also a distant relative of the oath to Varuṇa and cosmic waters as found in *Atharvaveda* XIX, 14, 8-9. As Keith observes, "Mitra is primarily the Lord of the contract ... [and] Varuṇa of the oath ... as in the case of the Styx in Greek religion (1989: I, 103-4).

Rhapsody 21 of the *Iliad* is concerned with Achilles' fighting with various Trojans by the river Scamander, in it and with the river-deity itself. This too has been linked with river battles in NE texts (B 119) but the incident may well derive from, or be an inherited parallel to the battle scene in *RV* VII, 19 (and 33, 3-6) where king Sudās was hemmed in at the river Puruṣṇī by the confederation of the 10 kings and won with the help of his hierophant, the great sage Vasiṣṭha, and the intervention of Indra (cf the intervention of Hera and Hephaestus in ll 328-77 in the Greek text). As usual the Hymns give no details but the slaughter and the gory corpses are suggested in brief touches. (Detailed descriptions of

battles, chariots, corpses and flowing blood will be found in the Indian epics, especially the second day of the war in the Bhīṣma Parvan, book VI of MB.)

The third incident is the flight of Artemis and Apollo from the battlefield, one compelled by Poseidon, the other by Hera, while their mother Leto is driven off by Hermes (*Iliad* 15, 435-503). This is reminiscent of *RV* IV, 28, 2 and 30, 4, where Indra attacks the Dawn and the Sun crushes their chariot and causes them to flee. The echoes are faint, admittedly, but Apollo is also *Phoibos* which z (Avestan *baya* and) V *bhaga* who is clearly an aspect of the Sungod, while Artemis may be linked with *Uṣas* as I suggest further down, sect V,1.[8]

An additional feature in the *Iliad* is the mode whereby some heroes reflect on things, i.e. "they speak to their own 'great-hearted *thumos*' or to their 'heart'". This too Burkert (B 116) connects with NE prototypes; but, of course, we find a similar formulation in the *RV* – speaking with one's self/ spirit (*tanu*: VII, 86, 2).

There are several other incidents in Homer (and Hesiod) that can be linked with the Vedic texts but enough has been said on this. I am not suggesting that Greek archaic texts, or even the points discussed above, have not been influenced

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[8] Dr Bhattacharji links Artemis with Durgā, yet on the same page she links Athena with Durgā (1988: 164). From the viewpoint that all deities are manifestations of the Absolute, this constant identification of different deities with different deities obviously does not matter. But when we compare and contrast so as to discover precise correspondences, such a method is not satisfactory. Many of Dr B's references to other mythologies (especially Greek) are wrong: e.g. "Demeter the mother-goddess of the Minoans [sic!]: was called Demeter Erinyes [sic!]" (p 86); for the Arcadian Demeter Erinys, see section II, above. Throughout the book there is the underlying notion of the conflict between invading Aryans and Dravidian natives (pp 10, 45, 90, 160, 163, 178, etc). It is a pity corrections were not made for the 1988 edition (by which time Archaeology had made it clear that there had been no invading hordes). Otherwise it is an immensely useful study of the historical development of Vedic mythology.

by NE traditions, but I am claiming that, whatever non-IE influences have affected these Greek narratives, they have many affinities with the Veda and that therefore their IE heritage cannot be denied.

IV) Divination

Divination was practised extensively in ancient India as is obvious in the Brāhmaṇas. Not only the flight of birds but also the direction of cows' movements in the Soma sacrifice served as omens for the sacrificer's fortune (*ŚB* IV, 5, 8, 11); an omen was also taken to be the clarity or otherwise of the fire. The *RV* hymns II, 42 and 43 already mention birds of omen. In II, 42 the *kapiñjala* (a kind of heath-cock) is begged to be auspicious (*sumaṅgala*): it is so, if it calls from the right or south (*dakṣiṇataḥ*) of the house, from the region of the Ancestors – then no thief or evil-wisher will do harm. Here we have the bird's call from the south or right, as in the Greek text mentioned in n4 it is the bird's flight from right to left. VIII, 47, 15 regards as a bad omen a dream of making a garland or neckband. Many other phenomena serve as omens – one's shadow appearing upside down in water or in a mirror; meteors and lightning; the scream of a jackal or the neighing of a horse; and so on. However, it must be emphasised that *the inspection of entrails, including hepatoscopy* (B, 46-53) *is not evidenced even in late literature.*

Burkert mentions also divination and prophesying by ecstatic (or raging) women (B, 80ff). This phenomenon is not at all attested in the *Ṛgveda*. The *Vedic Index* gives two references for female magicians *yātudhānī*, I, 191, 8 and X, 118, 8, but in both the word means 'female fiend, demonness': in the first passage the sun is to destroy these fiends of night; in the second, Agni will burn them up. The same applies to its references to the *Atharvaveda*. (Of course, there may have been some women who practised some kind of witchcraft: see **V, 2**, below.) Women were

present in rites and in philosophical gatherings, as shown by the intrepid Gargī who challenges the sage Yājñavalkya in *BUp* III, 8, 1ff, and also revealed hymns in the *RV*, but, according to the texts, there were no seeresses (like Pythia or Sibylla in the West) nor priestesses.

Both priestesses and haruspication are attested in the early Celtic culture. Citing Pomponius Mela, MacCulloch refers to 9 'priestesses' *antistitēs* on an island off Brittany "who lived in perpetual virginity", wielded power over sea and wind through spells, healed incurable illnesses, predicted the future to sailors and could assume animal forms (1948: 76). This account is clearly exaggerated fantasy but there is evidence of 'druidesses' *bandrui* or *ban-filid* (Kendrick 1994: 96-7). Tacitus writes that the Celts in Gaul consulted their deities through human entrails (*Annals* XIV, 30). Among the Nordic people, also, goddess Freyja had a divination rite performed by a seeress *volva* who fell into a trance or ecstasy (Davidson 1981: 117). The Balts too had priestesses (Puhvel 1989: 224-5).

So the Greeks might have brought such practices with them to the shores of the Aegean. On the other hand, it is possible that this custom spread from the Near East westward and to the north.

V) Magic and Purification

The Greeks, like other peoples, believed in demons, ghouls and ghosts and that these could enter and possess the human organism causing mental and physical illness, even death; also that these could be manipulated by means of magical rites, to guard against them or direct them against enemies. A large aspect of the Greek religion consisted in securing protection against these demonic forces or in purification.

1. *Demons and spirits of the dead.* In his well-documented study (1992), Burkert discusses extensively demons attacking and causing disease (pp 59, 65), guilt-

spirits torturing murderers (56-7) and ghosts of the unappeased dead possessing men (pp 65-6). All these he links with Mesopotamian parallels, but they are all found also in great abundance in the Veda.

Attacks of demons causing disease are well attested throughout the Vedic tradition. The Atharvaveda especially is full of such cases. *Takman* for instance, "god of yellow hue ... son of Varuṇa" (*AV* I, 25, 2-3) causes much trouble being the demon of fever: he attacks in autumn and the rainy season (V, 22, 3) like burning fire (VI, 20, 1) and is invoked in a brief spell – one of many – to enter into a frog (VII, 116, 2). There are *rakṣasas*, demons that assume various forms, like dog or ape (VI, 37, 11) or deformed human shapes (VII, 6, 13), and *piśācas*, that assume insect forms and the like: they attack a man (or an animal), enter and cause bodily or mental disorder (IV, 37, 11; V, 29, 5-9) and may finally bring death; they also infest human dwellings and whole villages (IV, 36, 8; etc.). Such fiends are found in action in the *RV* too – I, 133, 5; VII, 104, 10; etc.

The Mesopotamian or Vedic "carnivorous demons" do not, of course, cover exactly the case of the Erinyes who pursue Orestes "as beasts of prey, 'dogs' who want to suck his blood" (B, 59). The Veda, however, provides such canine figures. First there are Rudra's dogs that howl and swallow unchewed their prey (*AV* XI, 2, 30). Then there is *Saramā* which pursues and finds the thieves of cattle and then Indra recovers the animals (*RV* X, 108); Saramā is not expressly said to be a bitch in the *RV* but is so taken by subsequent texts (*Nirukta* XI, 25). However, the Veda has two more dogs, those of Yama, the guardian of the dead in heaven (*RV* X, 14, 10-12). Descendants of *Saramā* (with the epithet *Sārameyá*) they are called *Śabala* (? z Gk *Kerberos*) 'brindled' and *Śyāma* 'black', and guard the path of the dead to Yama's abode. "It is possible that they were conceived as going among men, and taking to the abode of death [in heaven] the souls of the dead" (Keith 1989: II, 406). Be it noted that some

think *Saramā z Hermēs* (so SGD, but KEWA III, 442-3 thinks it improbable). Saramā is Indra's and the gods' (in *Nirukta* XI, 25) messenger, as Hermes is of Zeus; she finds the stolen cattle while Hermes does the stealing of cattle; her offspring Sārameya guide on the path of the dead, as later Hermes is *psuchopompos*, escort of the dead to Hades. Here Burkert sees only the influence of NE gods' messengers (1977: 244) but obviously we have an IE element.

The guilt of murder, which attaches to Achilles in *Aithiopis* and to Orestes (B, 56), is fully recognised in the Veda as well; even the slaying (by Indra) of a demon like Vṛtra brings the taint of bloodshed. The killer becomes an outcast to be avoided, as is Orestes (B, 60), and is haunted by his deed (*Pañcaviṃśa Brāhmaṇa* XIX, 4, 10). The Sūtra texts, which come somewhat later, have the murderer carry the skull of his victim and wear the skin of an ass or dog, thus at once lessening his guilt by this declaration of his crime and warning others to stay away from the unclean person (*Āpastamba Dharmasūtra* I, 9, 24, 11-13).

Then there are the ghosts of unappeased dead causing "all manner of illnesses on the living" and here Burkert cites numerous cases from Greek texts (pp 65-6). Possession by ghosts is, of course, common in post-Vedic late texts but it is unknown as such in the early texts. However, some spirits of the dead, ghosts that are guilt-ridden souls perhaps undergoing some punishment, do wander among and pester the living (*RV* X, 15, 2; *AV* XIII, 3, 9). In Vedic texts, possession itself is an action of demons and ghouls only, as we saw earlier in this section.

2. Protection. Many and various means for protection against these demonic forces (and for purification) were used by the Greeks: spells, votive offerings, amulets of all kinds, even effigies, today's "voodoodoll" (B, 60-1, 65-7, 82, 87, 110). It should not come as a surprise that all such means, with some variants here and there, are amply presented in the Veda. The *Atharvaveda* (and much of the Sūtra literature)

abounds in various protective, expulsive, offensive and retaliatory means: spells (V, 31, 1; etc; in **3a,** below, the verses from *RV* are another such incantation); amulets of all kinds (I, 16, 3; etc, etc); use of plants (IV, 7; VIII, 7, 3; etc) and ointments of all kinds which are sometimes genuine medicinal remedies (IV, 9, 8; etc); carrying round of fire (VIII, 64, 1); and of course water for all occasions. Another feature in these practices is the making of effigies (out of wax and other substances) which are melted, buried or pierced through. These are made by women also and one description is in *AV* X, 1, 1-3, which also has incantations for protection; they are placed in wells or cemeteries (V, 31, 8). More details are found in the *Sūtra* texts (Keith, II, 389).

Burkert (pp 53-5) mentions two types of foundation deposits during the construction or consecration of a house, temple or other building, both in the Near East and Greece: one type consists of precious metals and/or stones, guardian figures and tablets with inscriptions; the other consists of animal sacrifice and libations. The first type, essentially an extension of the second, is unknown in the Vedic tradition. A beautiful Hymn (*AV* III, 12) describes the consecration of a house invoking gods *Savitṛ* 'Sun', *Vāyu* 'Wind', *Indra*, *Bṛhaspati* 'Lord of prayer, priest of gods', the *Maruts* 'gods of rain and medicine' (also warrior comrades of Indra), and *Bhaga* 'Bestower of fortune'. Offerings are made of milk, corn, jars of purified butter and curdled milk, honey and water. In later texts, the Sūtra-literature, a black cow or a white goat may be offered and in this Keith finds a similarity to "the black cock killed at the foundation of a new house in Greece" (II, 363).

3. *Purification.* Of all purificatory practices in archaic Greece, here we shall concentrate on the cathartic ritual which releases murderers from their blood guilt, although other cathartic practices are employed in circumstances of plague or other forms of pollution.

a) The purification ritual whereby a murderer like Orestes gets cleansed consists in having the blood of a

slaughtered piglet running down and over the culprit and then the blood being washed off with running water (B 56-7). *This procedure is unknown in the Vedic tradition.* Such a blood-bath is never used and the animals sacrificed in rituals are horse, ox, sheep and more usually goat (Keith, I, 279 and n 5). Instead of blood, the Vedic people invariably used running water which removed all sin such as lying, cursing and any crime of violence: "O Waters (*āpaḥ*), carry off whatever sin is in me, whatever crime I have done, whatever curse or lie" (*RV* I, 23, 22, repeated in X, 9, 7).

b) "Anything left over from the purification must be carefully disposed of", writes Burkert, as much in Greece as in Mesopotamia (B, 62). The same is true in the Vedic tradition: all remnants of the rite must be burnt thoroughly and whatever is left must be buried secretly (ŚB III, 8, 5, 9ff); then all get washed and the last vestiges of uncleanness float away with the running water.

c) Another Mesopotamian/Greek parallel for purification is the "young [man] holding ... a tamarisk, rod of purification" and "Branchos the Apollonian seer" frees the Milesians of the plague by sprinkling them "with laurel branches" while they "spoke the responses" (B, 61). In the Veda we find the use of the plant *Apāmārga* 'which drives away' (*AV* IV, 7; etc) as well as of other plants (*AV* VIII, 7, 3ff; etc) against diseases, evil dreams and the like. Water and incantations are used simultaneously.

d) Of the other details mentioned by Burkert in relation to purification, of interest is Apollo and Karmanor, the priest who purified the god on Crete after he had slain the Delphic dragon (B, 63).

Apollo's adventure and slaying of Typhaon's dragon-fostermother at Delphi (*Hymn to Apollo* 349-86) is really a repeat of Zeus' slaying of Earth's dragon-offspring Typhoeus (*Theog* 820-68). The name *Apollōn* is of uncertain derivation but his epithet *Phoibos* sounds cognate with (Avestan *baγa* and) S *Bhaga* 'Bestower of fortune', a Vedic deity that is clearly an aspect of the Sungod: the S/Gk

correspondences *bh/ph* and *g/b* are quite normal. However it is Indra the Thunder-and-Storm-god, with a solar aspect also, who kills the demon-dragon Vṛtra; Indra is also the 'bolt-bearer' *vajrin* and so related to Zeus; mention is also made of Vṛtra's dragon-mother (*RV* I, 32, 9). The Vedic and the two Greek myths are obviously one and the same in origin. Connected with this is the Teutonic myth of Thor, who wields the hammer Mjolnir and slays the serpent Midgard that encircles the world (as Vṛtra encompasses – [*āśayāna* – the Waters), but is himself killed in the process (*Edda*, 46-7 and 54).

The Apollo myth has the element of water with the presence of the stream Telphusa, as Midgard lives in the ocean and Vṛtra covers and wallows in the Waters; thus it is closer to the Vedic tale than the Zeus mythologem. Moreover, Indra, like Apollo, feels guilt after slaying Vṛtra and rushes off distraught (*RV* I, 32) – whereas Zeus has no blood-guilt. Indra's guilt and expiation is mentioned in later texts and is developed with epic exuberance in the *Mahābhārata* (V, 13 and XII, 272) where Indra gets purified with the performance of a horse-sacrifice. (For additional Apollo-Indra affinities see **VI, 2**, below.)

Burkert feels that the name Karmanor "does not seem to be Greek" (B, 63). We are not told who officiated in Indra's horse-sacrifice. Karmanor sounds like S [*śramaṇa* 'a wandering ascetic' or, more probably, like – [*śarman* 'refuge, delight', which often forms the last element of a brahmin's name (e.g. the common *Viṣṇu-śarman*) – the S/Gk correspondence [*ś/k* being frequent, as in [*śrad-/ krad-* and [*śruta/kluto-*.

VI) Three deities.

1. Artemis. Most of our information about Artemis comes from later sources. The archaic texts and iconography give little information.

Earlier (in **III, 5**) I suggested this goddess may be connected with the Dawngoddess Uṣas after citing the

incident where she and her brother flee from the battlefield. In the two Homeric Hymns to Artemis (Loeb 434-5 and 452-3), Artemis has certain traits that cannot be directly related to Uṣas, e.g. hunting with hounds and "destroying the race of wild beasts". Other features can be related to Uṣas, even Artemis' chief aspect as Moongoddess can be envisaged to derive from Dawn, elder sister of Night; then she delights in arrow-shooting, she causes an outcry among beasts and trembling on land and sea, and loves music, singing and dancing.

In *RV* VI, 64, 3 Uṣas is likened to a heroic archer/thrower *ástā* and a swift warrior *vólhā* against foes and darkness. She is not a huntress at all, but sets birds and beasts astir early (I, 49, 3; IV, 51, 5), while in the Mycenaean documents "Artemis (*atimite* [Dat.], *atemito* [Gen.]) was not obviously associated with animals" (Dietrich 1974: 172, n 218). She shares some features with the Artemis of the two Homeric Hymns: sister of Bhaga (z Gk *Phoibos*) in *RV* I, 123, 5, golden-hued, she has a glittering chariot (III, 61, 2), is likened to a dancer (I, 92, 4) and sings (I, 113, 4; I, 123, 5). In *RV* IV, 28, 2 and 30, 4, Indra attacks the Dawn and the Sun and crushes their chariot and they flee: this is faintly reminiscent of Apollo and Artemis fleeing from the battlefield, one compelled by Poseidon the other by Hera, and with them Leto compelled by Hermes (*Il* 15, 435-503). One might even link the name *Artemis* with the Mitanni theophoric names *Artatama* and *Artamanya* (Puhvel 1989: 99) and many Iranian names and nouns with *arta-* as their first element. This initial component *arta-* is connected with Vedic [*ṛta* 'cosmic order', which Uṣas is repeatedly said to follow. (Cf V [*ṛj-* z Gk *ar-gēs* and V *ṛṣ-* z Gk *ars-ēn*; the *-r-* was lost in the Mcn *Atimi-* ?) Admittedly, these are very tenuous threads.

2. Apollo. In section **IV, 3** above, we noted certain close parallels between Apollo and Indra. Since the two names are so very different it would be difficult to identify him with Indra. On the other hand, Zeus bears a name that is cognate

with V *dyaus* but, unlike Dyaus, he is a very active king of heaven sharing common features with Varuṇa and Indra. It is therefore worth noting that Apollo has a few more affinities with Indra.[9]

Apollo's birth in the Homeric *Hymn To Apollo* (ll 115-9) resembles very much the account(s) of Indra's birth in the *Ṛgveda*. The presence of Eileithyia, goddess of child birth, in the Greek hymn may be of NE derivation, since this motif is not present in the *Ṛgveda*; but it could also come from Greek poetic inspiration since a midwife's presence at a difficult birth is not an unnatural phenomenon anywhere. Like Leto, Indra's mother had a difficult deliverance: she carried the child in her womb for 1000 months and he came out from her side (*RV* IV, 18, 1-4). Then, as soon as born, Indra illuminated the sky (III, 44, 4) as Apollo leapt into the light (119). Indra displayed his warrior's prowess at once (III, 51, 8), drank the divine Soma, put on his garment and filled with his presence the two world-halves (IV, 18, 3-5) – as Apollo got washed and clothed, was given nectar and ambrosia, then burst out of his golden bands, asked for a bow and lyre and strode forth, and the whole island of Delos blossomed with gold (120-35). The amazement of the goddesses at Apollo's swift emergence and development (ll 119, 135) and the gods' alarm as he enters into the palace of Zeus (ll 2-3) are paralleled by the Vedic description that Heaven and Earth trembled in awe at Indra's coming forth (I, 61, 14). The details are not absolutely exact equivalents, but then again they are not found in the description of any other deity in Greek, Near Eastern or Vedic texts.

3. Aphrodite. Not only modern scholars, but ancient writers like Herodotus (I, 105 & 131) see the origin of this

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[9] Dr Bhattacharji connects Apollo with Vivasvat (p 243) and Kṛṣṇa (p 303) and Gk *Python* with S *Pūtanā* (p 304) whereas she had linked Gk *Puthon* (=Python) with *Budhnya* (p 150)! She does at least mention briefly the parallel of Apollo and Indra slaying the dragon-serpent (p 259).

Greek goddess in the Near East and (modern scholars) connect her with Sumerian *Inanna*, who became Akkadian *Ishtar*, Semitic Ashtorith and Astarte. However, there are enough indications to show that in part Aphrodite derives from or is parallel to, a goddess of the Vedic tradition. First let us examine her parentage.

a) Most of us think of Aphrodite as born out of sea-foam while some may know that she rose from Ouranos' severed genitals that floated on the sea-foam (Hesiod's *Theogony*, 188 ff). However, in *Iliad* 5, 369ff, Aphrodite's mother is *Diōnē* who lives on Olympus, and her father Zeus; in 20, 105, Apollo tells Aeneas, son of Trojan king Priam, that his mother Aphrodite is the daughter of Zeus. This means that the goddess had a normal birth born of a female, divine or mortal, with whom Zeus had coupled – and not out of Ouranos' bloodied genitals in the sea-foam long before Zeus came into existence. Dione does not appear anywhere else in Homer's epics, but she is attested in the cult of Zeus at Dodona (Kerényi 1982: 68; Burkert 1992: 98 and n 8), while the Mycenaeans had goddess *Diwija*, who may be related. Furthermore, Dione is mentioned by name alone in a long list of deities (Zeus, Hera, Apollo, Athena, Leto, et al) in Theogony 17, and again in 353 as one of the *Ōkeaninai* 'Ocean's daughters' – but it is not clear if it is one and the same Dione. She is also mentioned as one of the "best" goddesses present at Apollo's birth together with Rhea and others except Hera (*Hymn to Apollo*, 92-5). Now, in the context of all these high deities, Dione could hardly be the humbler Oceanid, unless she bore Aphrodite to Zeus. So either there are two Diones, one on Olympus and the other in the ocean, or the Oceanid, having born Aphrodite to Zeus, was, like Leto, taken up to Olympus by him – though Homer and Hesiod say nothing about this!

Be that as it may, Hesiod gives a totally different account for Aphrodite's birth. Clearly we have two different versions of the goddess' origin.

Here the *Ṛgveda* is of no help. Apart from Dawn-goddess Uṣas and River-goddess Sarasvatī who are endowed with distinct features, no other female deity appears in the hymns having individual personality. Skygod Dyaus, who in the context of our discussion may be regarded as the equivalent of Zeus, has no consort and is invariably mentioned with Mother-goddess Earth, *Pṛthivī* or *Kṣam* or *Bhūmi*; Indra has a consort *Indrāṇī* and Varuṇa *Varuṇanī* and Rudra (in the Sūtras) *Rudrāṇī*. We find the (secondary, marginal) cognates *diva/divan* 'sky, day' and *divya* 'divine' but no **divānī*. Keith wrote, "the pale figure of Dione, beside Zeus, suggests that the process which produced Indrāṇī and her fellows was already working in the Indo-European period" (I, 61). So *Diōnē* looks like an inherited form but it is most probably a much later Greek production. Whether it was coined by the poet(s) of the *Iliad*, as Burkert seems to think (B 97-8), or is of a much earlier date, it is not easy to decide on the available evidence. As for the Mycenaean *Diwija*, this clearly z S *divija* 'skyborn' or *divya* 'divine, celestial'.

b) According to Burkert, the name Aphrodite may be a "Greek form of Western Semitic Ashtorith, who in turn is identical with Ishtar" (B, 98 and n 7). However, if we forget about the Aphrodite-Adonis affair which is parallel to Ishtar and Dumuzi/Tammuz and is of late report, there is very little left to connect the two goddesses' character and deeds. Here, I ignore the evidence of Paphos and architecture (Farnell, 1896: II, 618), of Hermaphroditos, ornaments, votive offerings, figurines and the like, many of which are doubtful, as presented by Burkert (1977: 238ff): all these (particularly, repulsive figurines of a naked goddess with a bird face) have little bearing on the character we see in the *Iliad, Theogony* and the Homeric Hymns (*Odyssey* 8 being a different matter: see **c** below).

To begin with, we face serious difficulties with the derivation of Aphrodite's name, whichever way we look at

it. Be that as it may, the name does reflect the mythologem of her birth out of sea-foam in *Theogony* 178-97. Even if we accept a putative derivation from the Near East, and Aphrodite's birth from Zeus-Dione (be it another borrowing), we still have to account for her rise from sea-foam in Hesiod. Ishtar has to all appearances a normal birth from her parents Anu and Antu. In addition, unlike Aphrodite, Ishtar is passionate and explosive wherever she appears (*Gilgamesh* VI; *The Descent of Ishtar ...; Erra and Ishun: MM* 77, 80-1; 155ff; 305). Goddess of sexual love, storms and war, she had "countless lovers" and an "ability to engage in incessant sexual intercourse with numerous men without tiring ... Inanna [Sumerian goddess = Akkadian Ishtar] was known for her ambition and cruelty" (Dunstan 1998: 59; Penglase 1994: 19). Aphrodite has no such traits. It is claimed that she may be armed and can bestow victory (Burkert, 1977: 238 n 8) but we see nothing of this in Homer and Hesiod. Her coercion of Helen to go to Paris after his defeat by Menelaos (*Il* 3, 380-420) is of little significance when set beside Inanna: "You are known by your destruction of rebel-lands, / ... by your massacring (their people), / ... by your devouring (their) dead like a dog" wrote Enheduanna in her hymn to that goddess (Pritchard, 1975: 131). No, Aphrodite is not a *furchtbare Göttin*, a terrible goddess, as Burkert writes (1977: 240; and nothing more is added by Penglase in 1994: 162ff).

c) The archaic texts present Aphrodite in two different versions. In the *Iliad* (5, 311ff) Aphrodite has had her son Aeneas with Anchises (under Zeus' influence, in the long *Hymn to Aphrodite)* and Hephaistos is married to Charis, who is well disposed towards Thetis, mother of Achilles (*Il* 18, 368-409), and therefore cannot be Aphrodite under another name, as Kerényi suggests (1982: 72), since the latter is pro-Trojan. In *Theogony* 945 Hephaistos marries Aglaea, the youngest Charis (thus agreeing with *Iliad)*, while

Aphrodite bears to Ares two sons, *Phobos* 'fear' and *Deimos* 'terror' and a daughter, Harmony (*Theog* 933ff). However, in *Odyssey* 8, 276-381, she is married to Hephaistos but gives herself to Ares and, in a scene that is both burlesque and soft pornography, is caught in the act. (Clearly, the Homer who wrote the *Odyssey* scene is either a different or a very forgetful one.) This incident is probably the beginning of her reputed promiscuity and the later affairs with Hermes, Dionysos and Adonis (GM I, 68ff), in contrast to the timid, conciliatory and rather chaste figure in the other texts. Although she is the goddess of beauty and her function is to stir love and passion in gods and in mortals bringing about union (*Theog* 203; in *Il* 5, 429 'marriage' *érga gámoio*) by using her magic girdle, she does this not for herself but for others. She is docile and not very acute: Hera dupes her very easily in borrowing her magic girdle (*Il* 14, 170-214). The sexuality that Burkert ascribes to her is also not borne out by the very early texts (except *Odyssey* 8).

It may be that we have two different aspects of one goddess, but the details of her birth and her marriage suggest two (or more) distinct figures. The two versions contain confused elements and overlap: they furnish the origin of the later *Ourania* 'Celestial' Aphrodite (Herodotos I, 105; Plato Symposium 180D) as distinct from the *Pandēmos* 'Vulgar' (Burkert 1977: 242 and n 34).

d) In origin, Aphrodite has some affinities with an Indic goddess. This is not *Uṣas*, the Dawn, as many scholars have speculated. D. D. Boedeker argued for Aphrodite's origin in the PIE (really Vedic) Dawn-goddess; seeking support in philology, she examined earlier attempts at the derivation of the name and finally settled for S *abhra* 'rain, cloud, sky' and the PIE **dei-*'shine' (1974: 7-12). Following a different route, P. Friedrich also arrived at the PIE Dawn-goddess (1978: 22-53) and mentioned briefly Beodeker's work (p 44). Such an origin is not impossible, of course; the Greeks formed *Diōnē*

(z S√*div* > *dyaus* 'sky' etc.: see **a**, above) as the Romans formed *Venus* (z S√*van* 'love, gain' > *vanas* 'beauty, desire'). The Greeks could have formed the name *Aphroditē* from a compound, though not *abhra* and *dei but perhaps *abhra-* and *-udita* (*abhrodita is not attested in Sanskrit) in the sense 'risen from sky-water' (or even *abhra-* and *-aditi* 'the boundless Mother-goddess of sky-waters' which *abhrāditi also is not attested). Nonetheless, it is very difficult to see what Aphrodite has in common with Uṣas. Nor is it necessary to speculate about innovation and development of the Uṣas figure, because there is another Vedic goddess that has several affinities with Aphrodite. This is Śrī/Lakṣmī – and it could be argued, of course, that this goddess was in some earlier phase an aspect of Uṣas, who is daughter of Dyaus (*RV I, 48, 1*).

In the Vedic tradition we find goddess *Śrī* 'goddess of beauty and abundance'. (The name appears perhaps in Gk *Kēr/Kar* 'goddess of doom' and Roman *Cer-ēs* 'goddess of agriculture'.) In the *Ṛgveda* and *Atharvaveda* the noun means simply 'beauty, splendour, glory, prosperity' and the like, but it may have a tinge of divinity in *RV* I, 85, 2 and *AV* VI, 73, 1. As a fully recognised goddess she appears in *Śatapatha Brāhmaṇa* XI, 4, 3 and in the later iconography she is often seated on a lotus, thus being connected with the (later) appellation *Padmā* 'She of the lotus'; of course the lotus floats on waters. We do not hear of her origin until the epics where she is identified with Lakṣmī as consort of Viṣṇu. Here Śrī is said to rise from the (butter-) foam of the (milk-) ocean when gods and demons cooperated to obtain *amṛta* 'the elixir of immortality' (*MB* I, 16; with important variants *Ra* I, 45): as the ocean was churned and churned, first rose out of it the Sun, then the Moon and then Śrī clothed in white. (Other wonders rose also and eventually Dhanvantarī, the gods' physician, holding a gourd with amṛta.) Strangely, West is unaware of this myth (1997: 4-5,

where the *MB* is discussed, and pp 222-6, where a Maori myth is mentioned on the separation of earth and sky).[10]

Apart from her birth, Śrī has another affinity with the Greek goddess in that as Lakṣmī she is consort of Viṣṇu. As we saw, in Theogony Aphrodite is associated with Ares, the Wargod. Now, in action Ares is a rather pitiable god of war. Zeus, his father, is utterly contemptuous of him (*Il* 5, 765-6), Athena invariably defeats him (*Il* 21, 40), he gets wounded by Diomedes, with Athena's help (*Il* 5, 858), and in fact he never wins a fight (GM I, 73-4); nonetheless, he is the Wargod and Aphrodite bears his children. Not of major importance in the *RV*, Viṣṇu 'the active, expansive one' displays a martial streak in aiding Indra slay Vṛtra and himself slaying a mighty boar (I, 61, 7; VIII, 77, 10). He becomes a high god in the Brāhmaṇas (*ŚB* XIV, 1, 1, 1ff; *AB* V, 1, 1ff) and in the epics he is incarnated in the warrior caste of kṣatriyas, as the mighty and wise Kṛṣṇa of the *Mahābhārata* and as prince Rāma, the incomparable warrior of the *Rāmāyaṇa*. Viṣṇu's consort Lakṣmī is the goddess of Good Fortune and as Sītā, Rāma's wife, she bears two sons (but of opposite character to Ares' sons).

The noun *lakṣmī* initially means 'sign' (*RV*, X, 71, 2) as also given in *Nirukta* IV, 10. It acquires the meaning 'good sign' *puṇyā lakṣmī* in the *Atharvaveda* as also 'prosperity, good fortune', and in the later texts becomes the name of the goddess of Good Fortune. (In fact both Śrī and Lakṣmī are juxtaposed as "wives" of Primordial Man, *Puruṣa*, in the *(White) Yajur-Veda* XXXI, 22.) In this there is an additional

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[10] The critical ed. of the *Mahābhārata* (Poona 1970, BORI, Bk I, ch 16) and J. A. B. van Buitenen in his translation (1980, Univ. of Chicago Press, vol. 1, pp. 74-442 n 30) accept Śrī's rise as belonging to the mainstream story of the epic.

The emergence of *Iḍā* from the milk-offerings poured by Manu onto the waters (*ŚB* I, 8, 1-11) may be related to Śrī/Lakṣmī also, though this is not certain.

affinity with Aphrodite, who was at Athens regarded as the eldest of the three Fates (Pausanias I, 19, 2; X, 24, 4; GM I, 72). Kerényi mentions also Aphrodite's related aspect as Genetullis 'caring over child-birth' which places her close to Hekate, another Fate-figure (1982: 67).

Aphrodite's girdle provides yet another link. In the Vedic tradition, women as compared with men are always the inferior parts of the sacrificial rite and impure and must wear a girdle (*ŚB* I, 3, 1, 12). It is not impossible that this girdle became in course of time a means for inciting passion.

e) In conclusion, we have at least two figures of Aphrodite, one with a birth from Zeus-Dione and the other from the genitals of Ouranos in the sea-foam. The two have contradictory aspects and don't fuse satisfactorily. We find contradiction not only between the figure in the Homeric epics and that in Hesiod's *Theogony*, but also between the figure in the *Iliad* and that in the *Odyssey*. Penglase writes that "The birth myth [of Aphrodite] has some features which parallel those found with Ishtar in her myths" (p 165); but after giving an account of Aphrodite's birth in Theogony, he states "this myth has no parallels of narrative to those myths which survive about the Mesopotamian goddess" (p 166). The phrase "which survive" suggests that there may have been a myth of Ishtar rising from the sea. The suggestion is legitimate, of course, but not very honest and it ignores the fundamental and irreconcilable dichotomy in Aphrodite, if taken as a unitary figure.

The two figures or the two births of the Greek goddess suggest two different sources. The foam-born deity seems to be of IE descent while the other one, the figure in the *Odyssey* and later myths, comes from the Near East. This view alone would accommodate all the relevant elements in the myths and cult of Aphrodite and the testimonies of Herodotus (I, 105; I, 131) and of Pausanias (I, 14, 7) about her origin in the Near East.

VII) Miscellany

In this section I examine some other elements in the Greek culture.

1) Some Historical considerations

According to S. Kak (2000) art-experts A. D. Napier, H. Zimmer, think that the Gorgo representations in Greece owe much to Indic art. This is plausible, but such iconography would not be part of the IE heritage the Greeks brought with them. Any similarities would be due to contacts between Greeks and Indians after the 9th century and mainly due to the presence of Indians in the Persian armies that invaded Greek areas in the 6th (in Ionia in the eastern Aegean) and early 5th centuries (mainland Greece). From the time of the IE dispersal in the 4th or 3rd millennium (or even earlier), no contact of great significance could have taken place between Greeks and Indians before Alexander's penetration into Bactria. There are reports by writers of the Hellenistic and Roman periods that Greeks had visited India in much earlier times; Plutarch in his *Lives* ... reports that legendary Lycurgus of Sparta visited India (*Lycurgus*, 6). In fact Plutarch, Diodoros Sikeliotes (known as Siculus) and Diogenes Laertius manage between them to send just about every Greek sage into the East (including Pythagoras and Democritus, but notably not Socrates and Aristotle). Even if such journeys did take place, these sages are more likely to have brought back with them philosophical or scientific ideas rather than iconographic. It is much more likely that iconographic material would have reached Greece through conscripted soldiers in the Persian armies or through merchants[11].

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[11] Possible contacts between Greece and India from most ancient to Roman times have been examined extensively by J. W. Sedlar (1980). For this particular period see p. 79.

Prof S. Kak writes: 'According to Lomperis (1984), "Plato, through the Pythagoreans and also the Orphics, was subjected to the influence of Hindu thought but he may not have been aware of it as coming from India"' (Kak 2000).

Unfortunately there is very little evidence available for this subject; consequently all discussions must entail much conjecture. In any case, the period concerned here is post-Archaic.

2) Lamia and Gorgon.

Burkert is most probably correct in seeing borrowings of iconographic representations of the Lamia and Gorgo monsters from NE sources (1992: 82-7). The reproductions he presents (1992; also 1987: 30-33) are convincing and are matched by similar reproductions in Dalley (1998: 89, 90, 99, 102). Even archaeologists who minimise the total effect of NE influences on archaic Greek arts and crafts accept that

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I have not read Lomperis; his view sounds conjectural, given the insufficiency of early Greek sources, but, of course, it is possible. Later in the same article Kak cites Zimmer (1946) and Napier (1986, 1992) who argue that the Gorgon and the Cyclops have elements deriving from India; this too has some plausibility. He also cites Krishna (1980) who thinks the name of the mycenaean city Tiryns "is the same as that of the most powerful Indian sea-faring people called the Tirayans". This sounds utterly improbable. 'Tiryns' (*tirun-th-os*, genitive singular, with stem *tirun-th-*) cannot philologically be a cognate with, or derivative of, 'Tirayan': Greek upsilon [u] cannot correspond to, or derive from, Sanskrit [*aya*] (cf Greek *kiō* 'move, go', *ōkeanos* 'ocean' and *treis* 'three' and Sanskrit cognates *cay-a, āṣayāna* and *trayas* where the correspondence is strictly of palatal phonemes); then, we would have to account for the consonant *theta*. If we assumed that this most unlikely linguistic event took place, we would have to suppose then that a band of Indian sea-farers before the 17th cent BCE somehow managed to sail into the Mediterranean, got into the gulf of Argolis in the Peloponnese, landed there, travelled inland and somehow established a city or managed to give their own name to an existing community, while at that time, or afterwards, the advancing Greeks were setting up their own cities at Mycenae, Pylos and elsewhere. This I find incredible.

Relevant titles from Kak's bibliography: Krishna N. 1980, *The Art and Iconography of Vishnu-Narayana,* Bombay; Lomperis T. 1984, *Hindu influence on Greek Philosophy,* Calcutta; Napier A.D. 1986, *Masks, Transformation and Paradox,* Berkeley; 1992, *Foreign Bodies: Performance, Art and Symbolic Anthropology,* Berkeley; Zimmer H. 1946, *Myths and Symbols in Indian Art and Civilization,* Princeton.

there was imitation of and inspiration from NE forms (e.g. Starr 1962: 213ff; Snodgrass 1971: 417 & 1980: 64-7).

However, we must remember that often artists and craftsmen in one culture imitate forms of another culture in order to improve their own and express better their own ideas. These demonesses/ monsters that snatch up children (mainly Lamia) and eat up people may have belonged to the IE side of the Greek culture. Such monsters are found in most cultures. Thus in *RV* IV, 18, 8 occurs – this once only! – *kuṣavā*: according to Sāyana she is a demonness 'Evil-birth' who swallows children; according to some modern scholars she is a river who swallowed Indra (O'Flaherty 1981: 142 and n. 14). Nothing more is known about *kuṣavā*. However the Dharmaśāstra Sūtras do refer to demons snatching children (e.g. Pāraskara's *Gṛhyasūtra* I, 12, 4).

Here a small parenthesis may not be out of place. In the Rigvedic mythology anthropomorphism is down to a minimum and so is theriomorphism (mainly but not exclusively in the case of demons): human or animal features are minimal and, of course, at that time (whether 4th millennium or c 1000) there were no iconographic representations. Thus scholars at different periods interpreted these deities and demons as forces of nature (Max Müller, Oldenberg, Hillebrandt, Macdonell), as psychosomatic or spiritual forces within man (Shrī Aurobindo 1982; Frawley 1982 & 1992), as forces of fertility and sexuality (O'Flaherty in almost all her publications), as forces in Thermonuclear Physics (Rajaram 1999) and so on. How one interprets the *RV* hymns obviously depends on what circulates in one's mind at the time.

3) The Greek legend of the *Seven against Thebes* (in the drama of Aeschylus, c 467, which may carry echoes of events from the Mycenaean era) has certain similarities with (and many differences from) the NE myth of the terrible Seven (*Sebbiti*) who ride with Wargod Erra (*MM* 282ff). Burkert thinks the Assyrian legend may have influenced the

Greek one even if the latter were originally an historical event (B107-114). In support of the NE influence are adduced the Seven Sages and the seven-headed Hydra (B, 114). Although it is not stated explicitly, it may be that these evil Seven are an aspect of the Seven Sages or original Craftsmen (*MM* 291, 294) who, after civilising mankind before the flood, were banished back to the Underworld of Apsu (*MM* 327-8).

In the Veda there is no (allusion to a) legend of Seven evil-ones attacking the world or a city – only the 10 against king Sudās (**III, 5**, above). The only approximate motif is Indra's destruction of Seven Forts of a tribe 'of insulting speech' *mṛdhravac*, whom Keith calls (1989: 234) Dāsas, a common name for demons, in *RV* I, 174, 2; but no more is said of this. There are many allusions to the Seven Sages *sapta-ṛṣi* (e.g. *RV* IV, 42, 8) and to monstrous Viśvarūpa who is called 'three-headed' and 'seven-rayed' (II, 11, 19; X, 8, 8). In later texts there appear seven-headed monsters also. However, the most likely candidate, if at all, are the Seven Maruts of *RV* VIII, 28, 5, who are sometimes presented as 7 bands of 7 (*RV* V, 52, 17), and are companions of Indra.

The Vedic threads are admittedly very slender but no more than the Akkadian ones. Many strange transmutations of motifs are observed in oral transmission. Thus Indra, the mighty divine hero of the IndoAryans is but a minor fiend in the Iranian *Avesta*; he appears as Inar(a) in Hittite myths and as goddess Andarta (or Andrasta) among the Celts of Gaul and Britain. Again, Parjanya, a Vedic minor god of rain, is Perenu (and variants) in Slavonic mythology, a great Wargod (who, like Indra, killed a serpent to release cattle and waters) or the Lord of the universe; in the early Baltic texts he is a mere name *Perkunas* in a list of gods and later the oracular Thunder-god; among the Norsemen he appears as male Fjorgyn and female Fjorgynn, mother of Thor. Similarly *azugallatu*, the title of the Babylonian goddess of healing, Gula, becomes in Greek masculine *asgelatas* and perhaps

Asklēpios (B 75-9). So it would not be all that incredible if the seven godly Maruts appear in Greece as seven evil attackers and the seven forts as the seven-gated fort of Thebes – possibly with NE influences.

4) Plato devotes the whole of his *Republic* to show that a society would really prosper only if it were governed by wise men or philosopher kings; he reiterates this theme in his *Laws* 710B. This theme goes back to archaic texts where we read that the land and the people thrive under the good government of a faultless king (*Odyssey* 19, 106-13) or that peace and happiness prevail where just men rule (Hesiod's *Works and Days* 216-37). This view sounds so superbly reasonable that it comes as no surprise to find it expressed in other distant cultures, like the Chinese (e.g. Chuang Tzu in Giles 1980: 30, 76-7, 109-12), which enquired with sagacity into the nature of things.

This theme may have been developed indigenously by the Greeks. On the other hand, it is adequately presented also in the Veda. The bare principles of kingship (its inviolability, the defence of Law and of the people) and the structured social classes are enunciated in the Brāhmaṇas (e.g. *ŚB* V, 1, 5, 14; V, 4, 4, 7ff; etc.). In these texts there are several stories of righteous kings whose realm prospered. The best example is perhaps that of Aśvapati Kaikeya in whose kingdom "there is no thief, no miser, no drunkard, no man without the sacrificial fire, no ignorant person, no adulterer or courtesan" because he himself "had realised the Universal Self" (*Ch* Up V, II, 3-5).

5) *The substitution of sacrificial victims* is another practice in archaic Greece that has parallels in the Veda. This substitution in Greece for various reasons in different circumstances, including pestilence, is examined extensively by D. Hughes (1991: 79ff). The practice is well attested in the Veda too. In the Vedic texts this takes many forms and is done in a variety of circumstances (Keith, I, 268: "the victim is really offered as a ransom for oneself"). The

best known case is that of young Śunaḥśepa whose release is mentioned in *RV* I, 24, 12-3 and whose entire predicament is narrated in *Aitareya Brāhmaṇa* VIII, 13ff: an avaricious brahmin sells his son, Śunaḥśepa to king Hariścandra, who is suffering from dropsy having avoided to sacrifice his own son to Varuṇa as he had promised to do; the lad takes the place of the king's son and is tied to the post but prays to the gods and they release him. The theory of substitution is stated in *Śatapatha Brāhmaṇa* I, 2, 3ff and in *Aitareya Brāhmaṇa* II, 8. Since this practice is found also "in the provision of the old Law of the Twelve Tables in Rome where a human being is substituted by a Ram" (B, 74), we can safely assume that the practice has its root in the IE tradition.

6) The castration of Ouranos by Kronos in Hesiod's *Theogony* (ll 178ff) is a most curious mythological motif. Since the discovery of the Hittite texts *Kingship in Heaven and The Myth of Ullikummi*, orientalists and classicists invariably cite the NE parallel of Kumarbi castrating Anu as the origin for Kronos castrating Ouranos in Hesiod[12]. No classicist ever mentions in this connection any affinities with the Vedic mythologem of Indra's slaying the dragon Vṛtra (*RV* I, 32); neither do comparativists, as far as I know, mention any relation, albeit hypothetical.

The *RV* hymn I, 32 is one of many about Indra and his heroic deeds and is devoted wholly to Indra's fighting and slaying Vṛtra. The most relevant stanza is 7: *vṛṣṇó vádhriḥ pratimā́nam śúbhūṣan purutrā́ vṛtró aśayad vyastaḥ*. The more recent translations I have seen by W. O'Flaherty (1975: 75; 1981: 150) and by J. Puhvel (1989: 52) are misleading in presenting the contrast between a "steer" (i.e. Vṛtra, a castrated young ox) and a "mighty bull" (i.e. Indra). I don't see why *vadhri* should be taken only as a metaphor; in *RV* X, 69, 10 the attestation of *vadhryaśváḥ*- 'the gelded

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[12] See Penglase (1997: 185-6) for full Bibliography.

horse' or 'one whose horse is gelded' indicates that *vadhri* does not on its own automatically mean a castrated animal. A more correct translation would read "Emasculated, Vṛtra lay with limbs dissevered/scattered in many places – he who strove to be the equal of the mighty one". In other *RV* hymns we read that Vṛtra was struck in his 'vital part' (= *márma:* I, 16, 6; III, 32, 4; etc.) and then hacked to pieces (I, 16, 12; VIII, 6, 13). Vṛtra had genitals since there was a brood of Vṛtras and he was the eldest or foremost. So he got castrated in the course of fighting: his genitals were among the other parts of his body strewn here and there. And the next stanza (8) says that these scattered parts got submerged in billowing waters. When, moreover, we learn that Indra himself gets emasculated by a curse from sage Gautama after he, in the sage's form, went to bed with his wife Ahalyā (*Ra*, I, 47-8, developing the motif from *ŚB* III, 3, 4, 18 & XII, 7, 1, 10ff), then we can with good reason suspect that the castration of Ouranos may well be an inherited motif reshaped and retold by Hesiod, perhaps under NE influences.

There is another point of resemblance in this incident that should be taken into account. Stanza 4 of the *RV* hymn says that when Indra killed the dragon "at that moment [he, Indra] brought forth the Sun, Heaven and Dawn"; in *RV* I, 51, 4 again at the killing of Vṛtra Indra raises the Sun in the sky. Here then we see cosmogonic action beyond the release of the imprisoned waters. But the cosmogony here is quite different from the theogonic results of Ouranos' castration. Here the Sun, Heaven, Dawn and Waters already exist and are covered up or wholly encompassed by Vṛtra who is himself encompassed by darkness (*RV* X, 113, 6); Indra merely brings them forth again. The Hesiodic narrative has different proliferations: Ouranos disappears completely from the scene thereafter and Kronos (born wily, most terrible and hating his father) ascends the heavenly throne; from the blood of Ouranos on earth emerge the Erinyes (the

terrible instruments of divine punishment), giants and nymphs, while in the sea rises the goddess of beauty and love, Aphrodite. These complications seem to relate to the Vedic sacrifice of Puruṣa (= primordial Man) by the gods and its cosmogonic result (*RV* X, 90); in the Scandinavian myth the gods Odin, Vili and Ve dismember the giant Ymir (z V Yama) again with cosmogonic results; castration is not involved in either – nor in the cosmogonic dismemberment of Tiamat by Marduk in the Mesopotamian *Epic of Creation* (*MM* 256-7). Even stranger seems the Hurrian/Hittite myth where Kumarbi, Skygod Anu's son, bites off and swallows his father's genitals, becomes pregnant (!) and begets three gods, one of them being the Weather-god who overthrows in turn Kumarbi. I suspect the Greek and NE myths are both developments of the PIE motifs as preserved in the Vedic tradition. The Hittites after all were IE and must have brought with them some inherited material, even though this underwent, much more than the Greek IE heritage, "heavy substratal exposure and adstratal influence ... vertical diffusion from the local past and lateral diffusion from the contemporary vicinity", as Puhvel says of the Greeks (1989: 22). The Kassites again were IE or had absorbed strong IE influences since many of their names and some of their gods were of IndoAryan descent[13]: under their rule in Babylonia, especially under Agum II (early 16th century), there was "a surge of literary invention, collection and recording" (*MM* 47, 229; Heidel 1965: 13-4; Roux 1992: 251).

7) Many other motifs and themes common to the mythologies of archaic Greece and Vedic India could be mentioned but most of them have been indicated and

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[13] Leaving out uncertain or disputed names, we find some names, or an element in compound names, that are indubitably Indo-Aryan: -indaš < S *Indra*; -bugaš < S *Bhaga*; -Maruttaš < S *Marutas* (plural); -Šuriaš <S *Sūrya*; etc. All are taken from J. A. Brinkman's chronology and lists of Kings in A. L. Oppenheim (1977: 338).

discussed by other scholars (e.g. Keith, Bhattacharji, Arora, Puhvel et al). In this study I have examined aspects that have not been indicated or adequately treated so far and especially aspects of literature, religion and magic (sections III, IV, V and VII). No doubt there are others.

VIII) Conclusions

One first conclusion concerns the archaic Greek culture itself. It has a distinct strand of IE tradition. This would not have been pure since the Greeks must have assimilated other elements from peoples they met on their way to the shores of the Aegean. A second strand is the indigenous culture the immigrants met when they arrived in Greece: this too would have been composite, consisting of the mainland culture, the Minoan on Crete and the Cycladic (and other islands of the Aegean). A third strand, also composite, came from the Near East. These three got interwoven and produced the miracle of classical Greece. Puhvel thought the Greek tradition was not a conservative repository of IE heritage (1989: 22). This is true, of course, but only if one compares the Greek culture with the Vedic; otherwise the Greeks seem to have preserved much more than any other European tradition and the Anatolian one. The fact that the Greek language is *centum* while Vedic is *śatam* (or *satəm*) suffices to show that the Greeks and the IndoAryans were not close companions for any length of time to the exclusion of the other IE branches (i.e. Celts and Slavs, for example). Therefore the Greek correspondences or parallels with Vedic elements or practices cannot be coincidental (though some of them may be due to independent development): they derive from a common source, the PIE culture.

Another motif common to NE mythologies, Greek theogony and the Veda, is the incestuous relationship of many deities. In the peoples of the Near East this relationship is also a fact of life, at least among royal families.

This is not so in the archaic Greek and Vedic cultures: incest is condemned in both, as is evident in the Oedipus legend (mother-son relation) and the Yama-Yamī dialogue in *RV* X, 10 (sister wants to mate with brother but he resists). The explanation I would offer is that the Vedic culture knew that the gods were not real and did not exist as autogenous and autonomous entities. Karel Werner argued convincingly that the Ṛgveda contains two concurrent beliefs: one in polytheism with many individual gods and one in monotheism (1989). Indeed, the Creation Hymn *RV* X, 129 presents a most profound view of the primal Unity as the origin of all divine, cosmic and human phenomena. Scholars somewhat grudgingly conceded to the ancient Indian seers this view placing it as a late development of Vedic speculative thought (e.g. Keith, II, 446). Werner (acknowledging the work of R. Otto and others) showed that this was not so, but that monotheism is in the *RV* as old as polytheism. He should have utilised at least four more hymns. Two, which may be late (I, 164, 6 and X, 114, 5), say that poets speak of It, being One, in many ways – naming It Agni, Yama, Indra etc. The other two belong to the Family Books and are probably very early: hymn VIII, 58, 2 says "It being One has variously (vi) become this All (and Everything)"; then, the refrain of III, 55 states plainly "Single is the great god-power (*asuratva*) of the gods." Since the deities were representations of cosmic forces and manifestations of the One, then obviously it would not matter if they united and generated other deities just as cosmic forces mingle and generate new phenomena. In social life incest was not practised in ancient India, nor among the other IE branches.

The idea of a primordial Unity as the originative principle of all cosmic phenomena is absent in the Greek (and other IE) and NE mythologies, though in Greece some three centuries of philosophical enquiry into the nature of

things led eventually to formulations .of that Unity (by Anaximander,[14] Melissos of Samos and Plato). The Greeks retained the incestuous relationships among the gods but, probably because of their IE heritage, not in their ordinary life. So did the IndoAryans. The odd thing about the Greeks is that while their Philosophy found that primordial Unity, their religion continued with its polytheism. Of course, the same thing prevailed much earlier in ancient India. Obviously the One Primal Source of all, being Itself unmanifest, cannot so readily become an object of worship as other deities.

The second conclusion concerns the Vedic culture. Without it much in the ancient European cultures would have remained unconnected and unexplained – both in language and in religion or mythology. The legend of Greek Dioskouroi and Lithouanian Dievo Sunelai would not have been connected if it had not been for the Vedic Aśvins. The practice of sacrificial substitute (above VI, 5), to mention an example from religion, would be considered (as Burkert takes it in 1992: 73-5) a result of borrowing or diffusion from the Near East to Greece and thence to Rome. Philologists in the West, and no doubt many in India who follow western trends, place almost all IE branches on the same level in linguistic and broader cultural considerations. Thus O'Flaherty refers to "Indo-European attitudes" and "Indo-European cultures" in her examination of the IE myth of twins and horse-deities and begins with a discussion of the Celtic material and then the Vedic – and first the ritual of the horse-human copulation and then the myths (1980: 151ff); at least Puhvel starts his comparative study with the Vedic tradition (1989). It is understandable that all cultures should

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[14] Through inadvertence I had written here Parmenides and this was printed in ABORI LXXXII, p. 34 Parmenides' One Being has limits and is presented as a sphere, a concept quite different from the Unlimited *a peiron* of Anaximander and Melissos. The error is hereby corrected.

be studied with the same zeal but not that all should be accorded the same status or importance. Why? First of all, it is obvious that some preserve only a very small amount of inherited forms while others have a very rich inheritance and the Vedic tradition seems to be the wealthiest of them all. Then the Vedic heritage, even by the most niggardly dating at c 1000 BC, is older by at least 300 years than the earliest Greek records (barring the scanty Mycenaean ones). There is no disagreement among scholars that "Vedic is a language which in most respects is more archaic and less altered from original Indo-European than any other member of the family" (Burrow 1973: 34). Here we can add some philological considerations. Greek has *huios* for 'son' (z S *sūnu*, Gm *sun-*, Sl *synŭ*, Tocharian A/B *se/soy*, Av *hunu*) and *hus/sus* for 'sow (she-swine)' (z S *sū-kara*, Gm *su-/gu-*, L *sūs*, Av *hū*). Curiously, in Greek (and in the other IE languages) the two stems stand isolated without a root or other verb- and noun-cognates. Only Sanskrit provides a root (common for both 'son' and 'sow') with the dhātu √sū (>sūte) 'beget' and cognates both in nouns and verb-formations. Again Gk *thugatēr* 'daughter' stands rootless and isolated, as do its cognates in the other IE languages (Av *dugǝdar*, Gm *tochter*, Lith *duktē*, etc.); there are secondary, later formations e.g. Gk *thugatrion*, but only S *duhitṛ* shows a connection with √duh 'milk, derive' and other cognates. We observe the same situation with Gk *mētēr* 'mother' (z L *mater*, Gm *muoter*, etc.) or *mus* 'mouse' (L *mūs* Gm *mūs/maus*, etc.): here too only Sanskrit has √muṣ 'steal' and other primary nominals and verbal formations. Another, somewhat different consideration concerns the IE names for 'sun': all branches have cognates like S *sūrya*, Gk *hēlios*, L *sol*, Lith *sáule* etc., all masculine, except the Gm *sunn-* (Old English *sunne* OHG *sunna*) which is feminine; yet here again Sanskrit has f *sūryā* 'sunmaiden' and thus provides a probable explanation for the difference. It is

strange that, given all these simple facts, the Vedic culture is not given the higher status it deserves and it is a pity sanskritists acquiesce in this situation[15].

An examination of archaic Greek cosmogonic material would reveal further parallels in the Vedic texts. Neither in the Mycenaean nor in the archaic Greek period do we find the concept of the Unity that is the originative principle of all creation. This is true, of course, of all other IE and NE mythologies – except the Judaic religion; even in Egypt, Atum (=the Complete One), who 'evolves' or 'becomes' (=*kheper*) out of the primeval Water *Nun*, is only a secondary power, having something prior to him. It is therefore correct to see in all these mythologies "matter created from the action of heat on water" and also "a multi-layered dualism that pervades Indo-European myth and religion" (Stone 1997: 79). However, it is misleading to ascribe this view (as Stone does on the same page[16]) to the Vedic tradition as well, which, more clearly than any other ancient document, asserts the primordial Unity as the First Principle of all cosmogony. Such an examination would, however, require a separate study.

The evidence of parallels between archaic Greece and India leads to a third conclusion – that there are connections between the Vedic tradition and NE cultures. In the course of our discussion we saw many similarities both in mythological motifs and ritual practices.[17] Many of them could perhaps be ascribed to independent coincidental growth, arising from

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[15] Some notable exceptions have argued for the seniority and importance of Sanskrit and the Vedic culture: e.g. L. Dhar *The Home of the Aryans* 1930, Imperial Book Depot, Delhi; S. S. Misra *The Aryan Problem* 1992, Munshiram Manoharlal, Delhi; et al. I disregard here shrill Indian publications that rely on nationalist feeling rather than scholarly method and evidence.

[16] Puhvel states the situation with care, making the right distinction: Fire and ice/water were both present in Norse cosmology and eschatology alike. 'Fire in water' is a theme that recurs in Indo-Iranian, Irish and Roman lore, in a complex mythologem of clear Indo-European significance" (1989: 277).

observation of natural phenomena like sunrise, rain, storm and lightning, the night-sky, the repetition of seasons and so on. Such may be, to take Egyptian mythology, the separation of Earth and Sky by Shu, god of Air and Light who corresponds to Indra in his aerial and solar aspects. That Hathor should be thought of in terms of a divine Cow of plenty, while the all-nourishing Cow of heaven is a very common motif in the Veda, would also fall in the same category; the same can be said of Earth appearing in the midst of Waters, a concept shared by both the Egyptian and Vedic people. This, however, cannot be said of the idea that the souls of heroes or noblemen after death go to heaven and join the sun or stars: this concept could not have arisen from observation, nor the concept of "the cosmic egg" in the Vedic lore (*mārta-aṇḍa* 'sprung from the dead egg' in *RV* X, 72, 8; *hiraṇya-garbha* 'golden germ' in X, 121, 1; division of egg in *Ch Up* III, 19, 1-4) and in the Egyptian *Book of the Dead*, spell 85 (also *Coffin Texts*, spell 223: for both, see Faulkner). However this matter also would require a separate study.

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[17] Many a scholar (e.g. West 1978: 175-6, with bibliography) thinks that Indic legends like the 4 Yugas (*Manusmṛti* I, 81-6) and many others have a NE origin. M. Eliade believes that the conception of seven or nine heavens found in Buddhism and earlier Brāhmanism "probably represents the influence of Babylonian cosmology" (1972: 406) but adduces no evidence for this and I can't help wondering why the statement is made at all. Arora, again, thinks that NE legends influenced Vedic texts (1981: 183-4) and that Greek legends influenced the Indian epics and fables (177-82). The latter case is very probable if we take into account the settlement of Greeks into the northwestern regions of India after Alexander. The former case can be maintained only if we accept the "Aryan-immigration" theory and all it entails, a theory that has no basis whatever in fact (see n. 5, above).

8. **Shamans, Religion, Soma and the Ṛgveda**

1. Writer G. Hancock follows R. G. Wasson's researches into the use of a hallucinogenic or, as the newer term is, entheogenic drug from the mushroom *amanita muscaria* (= fly agaric) and indologists S. Kamrisch and W. Doniger O' Flaherty (1986): they all think that this mushroom was the soma potion, so amply celebrated in the *RV* (=Ṛgveda). He then concludes that "an ancient hallucinogenic cult exploiting the well-know[n] shamanic virtues of the fly agaric mushroom provided the visionary spark out of which the Vedas first emerged fully formed in remote prehistory" (Hancock 2005: 529). This view about the origin of the Vedas cannot be ruled out altogether, but no indologist who has even an elementary knowledge of the *RV* would entertain it. For there is another aspect to the "visionary spark" of the *RV* which all these writers ignore rather flagrantly.

Hancock's statement about the origin of the Vedas is expressed in the much wider context of the origin of religion. In his book *Supernatural: Meetings with the Ancient Teachers of Mankind*, having himself experimented with psychotropic substances, he examines at length the experiences of shamans who by ingesting various similar substances (or by means of rhythmic dancing) produce in themselves altered states of consciousness or trances and thereby have the power to see in distant places and periods, to cause rain, to heal and the like. These shamans who still exist in South America and many other parts of the world, are the "ancient

teachers of mankind". They are termed "ancient" because Hancock, following D. Lewis-Williams' neuropsychological theory regarding prehistoric Rock and Cave Art as expressed in numerous publications (1988, 1989, 1998, 2002 etc) does not doubt that this palaeolithic Art was produced by shamans. Hancock disagrees with Lewis-Williams because the latter "professes that the spirit worlds and beings encountered while hallucinating are not in any sense real" (Hancock 2005: 564; see also p 284-5). He thinks that this "spirit world" is very real. Nonetheless, he accepts that, as Lewis-Williams and Dowson first indicated (1988: 203-204), there are three stages or levels of mental images in this kind of hallucinating experience: stage one consists of entoptic phenomena (=geometric patterns like dots, parallel lines, zig-zag or wavy meanders, grids and the like); in stage two, these are turned into iconic forms (e.g. a zig-zag or wavy lines elaborated into snakes) and as this stage further develops, there appears an experience of a surrounding "vortex" or "rotating tunnel"; stage three has iconic shapes, often animal, therianthropic (=half-man half-beast) and other monstrous images; (Hancock 2005: 198-207; also a simple presentation in Lewis-Williams 2001: 338). The monstrous images are not only therianthropes (pp 69-93) and unnatural animals with two heads or elongated bodies (126-129) but also, drawn now out of recent material, fairies and dwarfs (364-410) and extra-terrestrials with their therianthropic forms (57, 261, 323 etc). However, Hancock agrees with Lewis-Williams' understated but far reaching theme that "mankind's first representations of supernatural beings, *and with them our earliest religious* ideas, were derived from hallucinatory experiences" (2005: 209, italics added). It does not occur to them that humans may have began their existence on earth with natural, inborn religious ideas and conditions, that did not require any hallucinatory experiences including taking external substances.

2. Neither Hancock nor Lewis-Williams were the first to ascribe the origin of religion to such non-ordinary drug-induced experiences. As mentioned earlier, Wasson *et al* had ascribed the origins of religion to the experiences arising from entheogenic drugs prepared from mushrooms like the fly agaric or from ergot of rye (1986: 24, 27, 41 etc). In that volume Wasson, Kramrisch and O'Flaherty dealt mainly, but not exclusively, with Soma and the Vedic culture, J. Ott with the Mesoamerican culture (Mexico) and C. Ruck with Greece and mainly Euripides' *Bacchae* as describing the introduction of the New Dionysiac religion. Even earlier, W. Le Barre had written "shamanism or direct contact with the supernatural in these states ['altered states of consciousness'] is the *de facto* source of all revelation, and ultimately of all religions" (1980:

83). However, Wasson traces the mushroom *amanita muscaria* to many other cultures – the Mayans, Siberians, Maoris, Tibetans, Madagascans etc. In an earlier publication with Ruck and Hoffman (1978), they argued that the Eleusinian Mysteries, held a little west of Athens, included the ingestion of an entheogen (ergot) and that Demeter's journey to the underworld to claim back her daughter Persephone was a shamanic trip that celebrates the forces of life and regeneration.

I shall not deal with all these cultures and their use of entheogenic substances beyond saying that I find such practices very probable, even though the evidence is not in every case adequate. Nor will I examine Lewis-Williams' claim that the Rock and Cave Art of Europe (c 33000 BP), Africa (c 25000 BP) etc is the work of shamans or the expression of their visions in trances and that in those long-ago experiences are found the seeds of religion. For here we must take into account two related aspects. The first is easy and concerns the very nature of religion: what do we mean by religion and by religious experience? Obviously different people mean different things and the matter requires detailed discussion. The second aspect concerns the neurological change and the increased intelligence that is supposed to have occurred in *homo sapiens* c40000 BP which manifested in changes in human behaviour, in the production of art itself, in forms of burial and in various social phenomena. It is true that graves were discovered with skeletons wearing ornaments, caves with painted ceilings and walls and many portable pieces of art in stone and bone. But does this necessarily indicate a neurological change and increased intelligence? Perhaps yes, perhaps no. This aspect also requires detailed discussion.

In this paper I examine only Vedic religion and Soma.

3. That the Soma drink of the *RV* was extracted from the *amanita muscaria* or fly agaric, as the mushroom is called, seems to me fairly certain. Nowhere is *soma* said to have

roots, leaves or fruit of any kind. Nor is it found in remote high places. In *RV* 8.91, going down to a stream for water, the girl Apālā finds *soma* by the way (*srut-*, or on the bank), takes it home and extracts the juice pressing the plant with her teeth (*jámbha-suta*) – no ritual act here. Wasson argues this identification so very convincingly (1971), that one cannot entertain the notion of ephedrine being *soma* or that the plant was fetched from mountains in Iran. Although an earlier publication of his with this very information had been dismissed by J. Brough in 1971 (see Wasson 1986:27), no less a sanskritist than D. Ingalls of Harvard accepted the identification without any hesitation in a paper of that very year (1971). Ingalls' paper contains 'Remarks on Mr. Wasson's Soma' and is printed next to Wasson's 'The Soma of the Rig Veda: What was it?', both in the *Journal of The American Oriental Society*, vol 91 (2).

This brings me to good honest scholarship. Neither Wasson nor Hancock refer to Ingall's article. Wasson writes at length about Prof. Brough's objections (1986:27) but does not mention Ingalls' article and his agreement. Hancock, again, mentions Wasson's article in *JAOS* (2005: 527, 691, notes 110-112, 118-121) but not Ingalls' which comes immediately after. What is so important about Ingalls' article and why was it ignored? Well, apart from accepting Wasson's identification 'soma-mushroom', Ingalls points out that, in the *RV*, there are "two sorts of religious expression and religious feeling, one ... calm, reflective, almost rational; the other built about the Soma experience ... exciting, immediate, transcending the logic of space and time" (1971:191). Any student of the *RV* would recognize immediately the two religious aspects – and, if acquainted with Greek literature, would associate them with the Apollonian and Dionysiac strands in the Greek culture – at least as one well known view puts it. Ingalls admits that he is not a specialist in the *RV*; if he were, he would have known further that both aspects derive from a third one, about which we shall speak later.

Obviously, both Wasson and Hancock are convinced that the origins of religion are to be found in Shamanic trances and revelations, they wish to promote this notion further, as do so many other writers (e.g. Winkelman 1992; McClenon 1997; etc) and so do not mention an article that would provoke serious doubts about this thesis.

Ingalls touches on two other points in Wasson's theory of Soma (1968, 1971). In his 1968 publication, the mycologist writes that rigvedic priests take on the role of Indra and Vāyu and drink Soma (p.25,30); also, that the priests urinate and others drink the urine which in this specific case contains Soma even more purified, having been filtered through the human organism and therefore more heightened and exhilarating. Ingalls rightly points out that nowhere in the *RV* is ever the suggestion that priests assume the role of gods, admits that in two or three hymns (2.34.13; 8.40.10; 9.74.4) there is urination in connection with Soma, then says that in the 10000 verses of the *RV* only once are priests said to piss Soma (9.74.4) and analyses the relevant stanzas to show that the verb *mihanti* "they urinate" is here used metaphorically (pp 189-190). And I think Ingalls' analysis is quite correct; for we shouldn't take a line or passage out of context, interpret it in a particular way then use our interpretation as evidence to prove a theory which, in fact, generated the interpretation in the first place. This circuitous and highly dubious process is unfortunately met very frequently in all kinds of writings.

Are we then to dismiss Wasson's view? Not at all.

4. Wasson refers to 9.74.4 which reads : _
ātmanván nábho duhyate ghṛtám páyaḥ
ṛtásya ná bhir amṛtaṃ ví jayate;
samīcīnáḥ sudánavaḥ prīṇanti táṃ
náro hitám áva mehanti péravaḥ

'[As] a living cloud (or, sky) possessing life, it [= pot with Soma] gives forth butter and milk (i.e. highly nutritious substances); the navel of Truth immortal (or, "ambrosia"

amṛta) is about to become manifest. Altogether, the generous ones (*sudānavaḥ* usually 'gods Maruts' here probably 'priests') make it well-disposed; the delivering fying/ fructifying swollen (? *péravaḥ*) men (or, Maruts) urinate it (= Soma) down as it is sent.' (The Maruts' urination is rain.)

Even if it is the one and only incident in the *RV* where gods/men urinate, even if it is wholly metaphorical, we cannot ignore altogether the evidence which Wasson arrays in such detail from so many different cultures and particularly from Siberia. "He who drinks the juice of the hallucinogenic mushroom saves his urine, and others drink this urine with the identical inebriating effect, perhaps heightened, for there is reason to think that certain nauseating ingredients in the original mushroom are filtered out in passing through the human organism. This use of the urine can be repeated over and over again, it is said, until it has passed through five human bodies" (Wasson 1971:178). Wasson presents evidence from other cultures too and, in addition, cites several examples of urine-drinking from post-rigvedic and even modern times. Thus, in the Aśvamedha Book of the epic *Mahābhārata* (14.54.12-35), Lord Kṛṣṇa in the guise of an untouchable *mātaṅga* invites the holy man Uttaṅka to drink his urine but the latter refuses and so loses the opportunity to join the immortals. Even today some devotees show a willingness to drink their guru's urine (Wasson 1971:179).

Undoubtedly it is unhealthy to drink urine. But when the urine is in fact a purified potion that brings an elevated state of consciousness without any inebriation and hangover and addiction, then one's caution or repugnance must be due to deeprooted (Western) conditioning and prejudice.

Personally, I find nothing unacceptable in all this. At the risk of upsetting many Indian friends (and Western sensibilities), I do accept Wasson's contention that the rigvedic priests drank Soma which was a distillation from fly-agaric and, even, its (more pungent) liquid form in urine.

Apart from the hymn cited above (9.74.4), 2.34.13 also speaks of urination as the Rudras in the form of horses emit *soma*. Then, 8.4.10 ascribes the same action to Indra: 'Come here to drink as a thirsty stag: drink as much soma as you wish. Urinating it out day by day, O generous One *maghavan*, you have assumed your mightiest aspect!'. So we don't have an isolated instance.

However, the important point for this essay is that there was in the *RV* another aspect of religion that did not entail the drinking of Soma. Ingalls referred to this as the worship of Firegod Agni "built about the hearth fire with a daily ritual – calm, reflective, almost rational"; this, too, was a channel of communication "between the human and the divine" (1971:191). But in fact there is much more to it than Ingalls writes.

5. In the *RV* we can detect a process which I call "divinization" and which is, really, the same as the upanishadic or yogic "Self-Realization", as is commonly termed in our times (Kazanas 2005, 2007). Most scholars, like Ingalls, somehow miss or disregard this aspect but some few have noted it and commented on it extensively (Shri Aurobindo 1956, Coomaraswami 1942, Jeanine Miller 1974, 1985, Werner 1989).

Repeatedly in the *RV* one god or another is said to reside within man. For instance, Agni, which is also the ordinary fire but is said to encompass all gods (5.3.1, 5.13.6), is the light and source of all inspiration *krátu*, is swiftest mental energy and is placed in man's heart *hṛdaya āhita-* (6.9.4-6): it is perceived there through mind *mánasā nicấy-* (1.67.2-3; 3.26.1; 4.2.11, etc.). The Holy Power *bráhman* is also within man or as the innermost armour (*bráhma várma mamāntaram*, 6.75.19). A very clear statement reveals that 'the mighty and wise guardian of the entire world has entered me [= the poet] a simpleton' – *inó víśvasya bhúvanasya gopấḥ sá mā dhī́raḥ pấkam átrā viveśa*, 1.164.21. Some

prudent visionaries seek and manage to realize these powers within themselves and chiefly the *acíttam bráhma* 'the Holy Power that is beyond conception' (1.152.5). Many descriptions are given in the hymns. I quote one from one of the older hymns: 'they found the spacious/infinite light even as they were reflecting' – *urú/jyótir vividur dídhyánāḥ*, 7.90.4. Another statement comes from a later hymn when the seer Kaṇva declares how he was born even like the Sungod *Sūrya* after he had received essential knowledge *(medhā)* about the Cosmic Order (*ṛta*) from his father.

In these (and other) cases like 3.31.9, 5.81.1, etc., Soma is not involved in the least. The higher state of consciousness or self-realization comes through contemplation, meditation, reflection and, of course, the subjugation of mind and its thoughts (1.151.4, 5.81.1 etc.). In other words, it comes not through some entheogen or other artificial, external aid but through mental action and other purely psychological processes accompanied by serious ethical practices, as is suggested in many hymns (1.125.7, 2.23.17, 4.5.5, etc., etc.).

In fact, to be fair to the *RV*, I must mention the fact that even the Soma ritual with the pressing, filtering and final drinking, has often an inner, psychological quality as if it is a process within man. The three filters, which Wasson (rightly) sees externally in the reality of the material distillation of the potion, are said to be within the heart *hṛdý-antar* (9.23.8). Then, 10.85.4 gives this cryptic statement: 'As you stand listening to the singers, O Soma, no earthly person tastes of you'. It may be that *soma* is not being drunk literally or it may be that it is a supra-normal power within man which cannot be felt or realised unless man refines his being and rises above his earthly common existence. But this symbolism for an inner process I shall not press too far now. We must also accept the simple reality that brahmin-priests imbibed the entheogen and had visions and experiences out of the ordinary.

However, since, as we just saw, the higher states of consciousness and experiences achieved through Soma-drinking could be and were being attained by natural processes without the introduction of entheogens, it does not seem probable that the Vedic religion, even as Wasson, Lewis-Williams and Hancock conceived it, began with some revelries. And this thought can be extended to cover the origins of religion in much earlier cultures in prehistoric, palaeolithic times. Since the people of the *RV* had means other than inebriating elixirs to attain higher levels of consciousness and unite even briefly if not permanently with "divine" forces, there is every reason to suppose that normal humans (i.e. anatomically modern humans, *homo sapiens sapiens*) could and did achieve similar states in earlier periods without the use of drugs. It is like sleeping – to use an analogy. People who sleep naturally, going into deep sleep and getting rest and energy-replenishment, do not need and would not take sleeping pills. Only when this natural ability is lost or impaired, say in pathological conditions, would people resort to the artificial means of sleep-inducing substances. Similarly, one could argue that people turned to entheogens after they had lost the capacity to rise naturally to higher levels of being and consciousness.

Let us explore this further.

6. Lewis-Williams stresses the fact that Shamans obtain "extra-human" powers frequently through an ordeal and an encounter with death (2002: 274): here he follows M. Eliade (1972: 43ff) who examines Siberian shamanic practices, Katz (1982) who describes the shamans in African tribes and Joan Halifax (1982) who writes about the suffering of shamans worldwide. Such experiences belong to the realm of "somatic hallucination", he writes (Lewis-Williams 2202: 271): here *somatic* (from Greek *sōma*) means 'bodily' and has nothing to do with the potion Soma! "Somatic hallucinations", he continues "may be induced by ingestion

of psychotropic drugs, sensory deprivation and other extraneous factors [like the extended rhythmic dancing of tribes in South Africa or India], or by pathological conditions such as temporal lobe epilepsy and schizophrenia". In subsequent pages he presents various images of wounded people both from African Rock Art and from Upper Palaeolithic cave-art (pp 276, 278). Hancock examines many other sources and devotes many more pages to this theme giving many more representations of similar nature (2005: 262-275). He also emphasizes the incidence of therianthropic images or the different stages of transformation from man to beast as found in Upper Palaeolithic art (72-93; also 124-9; 175-180) and of abstract patterns like grids, zig-zag lines, honeycomb repetitions etc (197-207).

In their altered states of consciousness or trance journeys, the shamans have their somatic hallucinations or visions in that they enter "the world of spirits" as it is said. Their world has three tiers: there is the ordinary daily life we all experience, then the spirit world above and also the spirit realm below (Lewis-Williams 2002: 145ff). In the world above, they experience lightness and dissociation and look down on their surroundings as they rise to the sky flying through the air, meet various "spirits" of people and animals (even while themselves are often transformed into animals) and receive information from them. Or they sink to the realm below going through the ground or water, rushing through a tunnel or swirling in a vortex, where they again meet spirits and their own "animal helpers".

In these states they mostly experience much pain, like being pierced by arrows, or being severely stung or bitten, or having their flesh torn off their bones or entrails pulled out and so on (Hancock 2005: 268-275).

There have been many studies on the various aspects of shamanism (Boas 1888, Bourke 1892, Mikhailowiski 1894 etc) since the end of the 19th century and many more in the

20th (Dixon 1908, Shirokogoroff 1926, 1935, Elkin 1930, Harper 1957, Eliade 1972, Kalweit 1988, Ripinski-Naxon 1993 etc). From these and more recent studies (Francfort *et al* 2001, Narby and Huxley 2001, Keeney 2003 etc) we see that the shaman comes out of his trance state with new powers which he normally places at the service of his community. It is recorded that he has the ability to see into the future or distant regions, to cure the sick, to control the weather and animals, to levitate, to cause telekinesis and practise telepathy, to transport souls back and forth from the netherworld, to enter and possess another's body, and to initiate new shamans. Such powers obviously give him great importance in the community.

7. As was said shamans enter these states and obtain their visions or "somatic hallucinations" by special rituals involving ingestion of a psychotropic substance (like fly agaric or some other psilocibyn-containing mushroom etc) or extended dance leading to trance, or else though dreams and even by viewing this parietal art once it was painted on rocks or cave-walls and ceilings (Lewis-Williams 2002:157-8). Their hallucinations were often seen to emerge from within the walls or ceilings in the caves or the rock-surfaces in the open, often crowding one on top of the other and/or floating here and there with no exact scale or positioning of figures (Hancock 2005: 243). When the trance ended they would reproduce (or they might describe to others to do so) the important elements of their visions in painted images on the places they had seen them thus establishing "portals to the spirit world" (ibid). What were the highlights of such hallucination?

Hancock sums up eight categories appearing in this art (2005:240).

a) Abstract geometrical patterns (zig-zags, grids etc) often in combination with fully iconic figures.

b) Hybrid animals blending characteristics from two or more different species (snake reedbuck, antelope-feline etc).

c) Monsters like a lion with two heads and other bizarre creatures.

d) The therianthrope – part man part animal.

e) The figure of "wounded man" pierced by spear(s) or arrow(s).

f) The rock face is often used to the best advantage by exploiting its mounds and hollows to give the impression of a screen out of which emerge the figures.

g) Many superimpositions of images upon earlier images.

h) Disregard of scale and absence of ground and horizon lines as though the images are floating.

A ninth feature in these images could be added to the list: men, therianthropes and animals often seem to bleed at the nose.

The RV tells quite a different tale.

8. In the *RV* we find no mention whatever of anybody being in pain or suffering in any way as a result of having drunk Soma or having been in deep reflexion. For instance, one of many descriptions in Eliade reads as follows: One novice was initiated by his shaman ancestors while he was ill: "they pierced him with arrows until he lost consciousness ... they cut off his flesh, tore out his bones ..." (1972:43). Another neophyte has his navel pierced by a lance and an arrow, then is killed and afterwards resurrected by an older shaman (1972:55). Eliade has about 30 pages of such descriptions of dismemberment, death and resurrection – all experienced in "somatic hallucinations". In the *RV* hymns there is nothing even remotely resembling such experiences. Drinking soma is always a joyous, exhilerating, most satisfying experience.

Commenting on "shamanism" in ancient India Eliade finds that hymn 10.136, usually titled *Keśin* 'long/loose-haired', belongs to the category of the shamanic flight to the sky and acquisition of godly powers (407-8). Yes, pehaps so. But other seers also ascend to heaven (like Vasiṣṭha in Varuṇa's

boat: 7.88) while the Ṛbhus are actually raised to godhood. However, Eliade does admit that these practices and beliefs – even in post-rigvedic times – "are not necessarily 'shamanic'". He examines briefly *tapas* which he thinks is primarily "excess of heat ... obtained by meditating close to fire ... or by holding the breath" but does not consider at all the soma-drinking practice – except for the briefest mention (413). But he does note that sutra 4.1 in Patañjali's *Yogasūtra* refers to medicinal plants *auṣadhi* having the power to give – like *samādhi* – miraculous powers. Finally, he finds shamanic elements in some *RV* hymns, like 10.57 and 58 and *AV* hymns 8.1.3 and 8.2.3 where the soul is called back (414-5). But, of course, such hymns may well refer to reincarnation or to the acquisition of a form in higher realms and have nothing to do with shamanistic practices. He notes also "shamanic motifs that still survive in figures as complex as Varuṇa, Yama and Nirṛti" who are "binding gods" with a net or noose (*pāśa*). Here again, a seasoned vedicist knows that neither Varuṇa nor Yama are "binding gods" only: they are also liberators releasing from the bonds of sin, disease and suffering. As for Nirṛti – it is the state of absolute void wherein all forms are dissolved and all energy is absorbed.

There is serious difficulty in such approaches as Eliade's. First, this scholar mingles texts of different later periods (*sūtras, upaniṣads, brāhmaṇas* and *AV*) with the *RV* which belongs to a very much earlier period. Later texts, even the *AV,* show important changes. There is devolution (or degeneration) as words acquire new meaning(s) while practices become grosser and show significant alterations (e.g. fixed altars with bricks in the Brāhmaṇas). Second, there is an unwavering assumption that shamanic practices (or animistic religions) as found in Siberia, among the Eskimos and other hunter-gatherer communities are older than those found in the *RV* because these communities are more "primitive". This is largely based on the wretched Aryan

Invasion Theory which has the Indoaryans enter into Saptasindhu (N-W India and Pakistan) c 1700-1500 BCE, conquer the natives, (Dravidians, Mundas and whatever) or drive them East and South and gradually impose their own culture but at the same time absorb elements from the native one. Comparisons with such "primitive" folk and with post-rigvedic texts are not useful because the *RV* is much earlier than these. Intent as Eliade is on shamanism, Altaic, Siberian and the like, as being more ancient and archetypal, he finds in the Vedic tradition (and in Buddhism) influences from the native "substratum" and even from Babylonia (406). It does not occur to him that the influence could be in the other direction; nor that monotheism, henotheism and polytheism exist simultaneously in the *RV* and most probably monotheism is in fact older; nor that both the drinking of Soma and the reflective practices in the *RV* do not aim at shamanic states but at full divinization (or Self-realization) as I indicated earlier in §§3,5; nor that polytheism, animism and the like are, in fact, devolutions (or degenerations) from an earlier and truly primitive form of monotheism or monism.

9. Hancock and Wasson, in contrast to Eliade, show clearly that the Soma ingestion in rigvedic India, is the true shamanic practice (which is in harmony with Lewis-Williams' theory of neurological change c 40000 ago and of the inspiration for the Cave Art in Europe and the Rock Art in South Africa and other regions).

Nonetheless, we find no descriptions in the *RV* corresponding to those that modern shamans from various parts of the world have given to researchers since mid-nineteenth century. There are no unions with or possessions by peculiar demons or goblins which result in higher states of being and knowledge (as with shamans: Eliade 1972 chs 2-4; Hancock 2005: 338-344), or with animal spirits that are or become the aspirant's helper and source of power (Lewis-Williams 2002: 167, 253 etc). Supernatural beings like demons, imps, goblins, fairies, water nymphs etc, are

mentioned in the *RV*, but in the rare case where there is union (as with King Pururavas and nymph Urvaśī, *RV* 10.95) there is no shamanic experience and new knowledge. Above all, we don't find descriptions of therianthropic transformations and of infliction of pain with arrows, spears and the like. I repeat, there are no such descriptions at all in the *RV*.

But it is not only the hymns of the *RV* that are free of these extreme shamanic experiences. There is also the Indian Rock Art. Representation art in portable pieces goes back to c 40000 BP. Engravings or paintings on surfaces in rock-shelters go back to 25000 for certain, possibly before (Lorbhanchet 1992). Here also, from the earliest palaeolithic Rock Art down to chalcolithic and even the early historic period, we find no therianthropic transformations nor the Upper Palaeolithic "wounded" figures (pierced by spears) which "may represent a form of shamanistic suffering, death and initiation that was closely associated with somatic hallucinations" (Lewis-Williams 2002: 262). I should add that the *RV* has no mention whatever of any kind of iconic representation in painting, sculpture or relief.

Clearly then, Lewis-Williams and those who follow him and even go beyond his conviction that the shamanistic experiences are sheer hallucinations without substance beyond the imagination, like Hancock (2005: 284-5; 564), are wrong in thinking that the three stages of shamanistic hallucinations outlined above in §1 are universal. "We believe that 'shamanism' usefully points to a human *universal* – the need to make sense of shifting consciousness – and the way this is accomplished" writes Lewis-Williams (2002:132, emphasis added). Elsewhere he writes also "Joan Halifax summed up the suffering of shamans on behalf of their communities *worldwide*" (p 226, emphasis added). The *RV* and Indian Rock Art clearly show that no kind of therianthropic transformation, of meeting and uniting with animal-spirit and of suffering need be involved in reaching higher states of consciousness.

10. Other scholars have on different grounds found fault with Lewis-Williams' general theory – some with no apparent good reason taking a very narrow view of the notations of the word 'shaman', arguing that such a figure did not exist in South Africa and claiming that he selected carefully his evidence (Bahn 1997: 182-3), or that he misrepresented some of his sources (Hromnick 1991: 100). Hancock tackles very ably these criticisms (2005: Appendix One).

On the other hand, R. White, another expert on pre-historic Art, does present neutrally Lewis-Williams' shamanistic Trance Theory but he points out that all the material from prehistoric paintings and engravings used in support of the theory constitute less than 10% of the total of such art (2003: 122). Indeed, the magnificent images of bisons, bulls, horses, stags etc painted in Altamira, Lascaux etc in various styles, but almost always most vividly and realistically, and many animal and human figures in S. Africa, have little to do with the material used to uphold the shaman's trance hallucinations. The absence of such material (except some honeycomb patterns and two or three therianthropic figures) in the Indian Rock Art raises another formidable question.

However, I don't find it out of the ordinary that shamans (in the wider sense of the term) did have their trance experiences in caves or rock shelters and then had them recorded on the rock faces and even the ceiling of the caves. I simply object to the sweeping statements that shamanic trance experiences, as described by the writers mentioned so far, are a universal or all-human process wired into our neurological system, and that religion started with such experiences and especially with the suffering or wounded shaman. And I object because the Indic material, textual and iconographic, does not bear them out.

Another serious objection concerns the incompleteness of this theory. Yes, let us accept that the initiates feel

excitation after the entheogen or the dance or whatever other aid; they feel tingling, pricking, burning and other tactile sensations and these are translated into images of spirits attacking with arrows and lances (Lewis-Williams 2002: 271-7). Let us accept that all such experiences are somatic hallucination. But, then, when the initiate returns from his trance(s) to our normality and is now a shaman with supra-human powers, how did he obtain these powers? Neither Lewis-Williams nor Hancock offer any explanation for this.

11. Hancock's *Supernatural* has as subtitle 'Meetings with the ancient teachers of mankind'. This is a very alluring subtitle. But when one has finished the book one wonders what it is that these shamans have taught mankind. The shamanic initiation stories and other adventures that one reads in Eliade (1972), Luna (1986), Kalweit (1988), Halifax (1991) and so on, are all modern, not earlier than the mid-nineteenth century; nor are they illuminating in any significant way. Kalweit reports that a Mexican shaman was in his pre-shaman period struck by lightning but survived, though he would lose consciousness regularly for six months. Then, after such an episode his spirit was abducted by *enanitos* 'dwarf-sized supernatural beings' who intended to turn him into a shaman. At first he refused but after the *enanitos* beat him severely and threatened to kill him he acquiesced, received a staff and three stones as aids to healing and was married to an *enanito* wife. He then returned to his ordinary life as a shaman but was not allowed to have sex with his ordinary human wife but only with his *enanita* in a trance! When he tried to have sex with his human wife, he swooned and his spirit was forcibly taken to a cave and received a thorough beating. Since then he has sex only with his *enanita* wife and has engendered several children who live with their mother in a cave in the *enanito* world (1998: 141-2).

It is very probable that this shaman did much good to his small village. But what does this tale teach us? Nothing at all.

Hundreds of such tales are reported from many regions by many investigators. One may or may not believe everything. But the fact remains that they teach us nothing. They don't even produce the emotional uplift that a good short story or a good poem does. (For similar or corresponding stories of witches and "healers"and their "familiars" in medieval Europe see Purkiss 2000 *passim*, esp 152-3).

What do the prehistoric paintings teach us? An artist might learn something and people might admire the finest specimens but the rest is of no interest to anybody except archaeologists, anthropoligists and various historians.

Hancock would have us believe that Christ himself was a shaman, "so obviously and so profoundly" since he was half-human half-godly, had healing gifts and went through the ordeal of crucifixion to die and be resurrected (2005: 499). Except, of course, that halfhuman and half-godly is not parallel to half-man half-beast and his ordeal came at the end of his life and not like a shaman at an initiatory ritual. (Here again we find defective scholarship with misleading information.) Then Hancock tells us the early Christian Gnostics practised a mushroom cult but in a note it is clarified that these were the Manicheans (p500, n11 on p687) who were definitely not "primitive Christians", as he calls them but of the 3rd century CE and had little to do with the early Gnostics and their belief that the true nature (or self) of man is the same as that of the Godhead. Here too we have wrong information and dubious scholarship.

M. Ripinsky-Naxon goes much further in finding therianthropic and shamantistic notions in early cultures. E.g. "ancient Greek religion had shamanistic beginnings" (1993:2); also in the Khmers of Cambodia (ibid, 22) etc. He also thinks that in ancient times in shamanistic practices "human victims were offered in sacrifice to propitiate [the] Master of Animals" (p 27). Unfortunately very little real evidence and documentation is provided for these claims.

Hancock refers extensively to the double helix of the DNA. Here he cites several writers but I stay with only two

who have direct relevance to our discussion – Jeremy Narby and Francis Crick.

Narby puts forth the hypothesis that the DNA has 'mind' or intelligence and that the entheogen *ayahuasca* can open an inner door and establish a connection with that mind and its non-material reality (1995:92-103). What is more, he believes that this living-tissue technology was developed "elsewhere than on earth" (1995: 104). Crick, the Nobel winner who with J. Watson discovered the double helix structure, advances the similar theory that DNA is not of our earth but was developed by an extra-terrestrial civilisation and contains encoded messages (1982).

It is not impossible that the primary building blocks of living creatures did develop in some distant Galaxy and, endowed with intelligence, were sent, or came accidentally, to Earth some four billion years ago. But this consideration does not really explain the origin of 'life' on our planet; it merely pushes it further back and tacitly begs the question afresh: How did 'life' arise in that alleged alien civilisation? Neither the two writers nor Hancock raise the issue. Odly enough it is raised by fiction writer Dean Koontz in one of his novels: if super-intelligent extra-terrestrials created our living world, then who created them? (2001: ch 72).

Another point needs to be made here. Some biologists have in recent years began to question the primacy of the DNA ascribing equal if not more value to other parts of the cell, like proteins and the membrane (Lipton 2005; Baltimore 2001; et al). It is also thought that the DNA can be altered/ modified by various factors (*Times on Line* 17th Sept 2008: M.,Linklater).

12. Here follows a brief recapitulation and a different point of view.

The notion of writers like Wasson, Lewis-Williams, Hancock and others mentioned in previous pages, that religion (which was not defined by them) started with shamanistic initiations, trance-states and extraordinary practices do not at all tally with the contemplative/meditative

practices found in the *RV* and other early texts of the Vedic Tradition (like the Upanishads). While there is ample evidence that higher states of consciousness can be achieved through the absorption of entheogens or dancing and other shamanistic practices, there is also strong evidence that such states can be more properly attained through contemplation/ meditation and a mode of living based on strict ethical observances. This latter course is the one found very clearly in the Vedic Tradition (§§3, 5, 8, 9).

As was said earlier (§5, end) if one can sleep well in the normal run of things, one does not resort to sleeping pills or other extraneous aids. Only when the natural capacity is lost or impaired would one turn to such aids. Similarly, so long as people were able to reach those higher states of divinization, as the *RV* amply demonstrates (§5), they would not need to resort to shamanistic practices; and, as was said, neither the ingestion of Soma nor any other spiritual practice in the *RV* entails shamanistic suffering like piercing with spear or arrow, being beaten or torn and so on. The rise into a higher state of consciousness is always a joyfull experience. In these circumstances, one would use extraneous aids either to speed up the natural process or to experiment and gain insights prior to the full experience (as the rigvedic priests did with Soma). Hymn 8.48.3 say unequivocally:

ápāma sómam-amŕtā abhūma	áganma jyótir-ávidama devā́n;
kiṃ-nūnām-asmān kṛṇavad-árātiḥ	kím-u dhūrtír, amṛta, mártyasya.

'We drank soma, we became immortal; we went to the light, we found the gods; how could now affect us distress, O Immortal One, how mortal's malevolence?'

Consequently, on the basis of the rigvedic evidence, shamanistic practices and experiences are in fact later developments. Furthermore, the widespread belief that at c40000 BP there was some kind of neurophysiological change towards greater intelligence in *homo sapiens* (§2, end) is by no means well-founded. Plato had argued that the

invention of writing was accompanied (and perhaps was occasioned) by a fall in the power of memory. Similarly, one can argue that the new behavioural patterns of that period may indicate a fall in intelligence.

However, all these issues need further exploration.

9. **Tad Ekam: not female, not male**

0. Abstract Contrary to the widely held beliefs that in its origin religion had many gods (polytheism) or a supreme male god or the worship of a female (Mother) Goddess, this paper argues with much evidence that the original state probably was one in which all deities are expressions of a Primal Power, itself unmanifest and being neither male nor female.

Introduction

1. It is generally assumed nowadays that man *homo sapiens* has descended from some ape-like creature, which itself, "evolved" from some even more primitive mammal, by a process of "natural selection" which entailed numberless accidental developments of organs and functions: this is the so-called scientific view (Ruse M. 2003; Gribbin & Cherfas 2003; Dawkins 1996; etc), although many scientists have since the 1980s cast strong doubts on this (neo-) Darwinian explanation of the appearance of different species in the earth's biosphere (Dembski 2004; Behe 1996; Bowler 1992; Denton 1985). It is generally assumed too that human language "evolved" out of animal grunts and bird-twitterings after the vocal machinery and brain structure became sufficiently and fittingly developed (Hawkins and Gell-Menn 1992:21-83). Another widespread assumption is that the worship of the Mother Goddess is a much earlier form of religion; to quote an authority: "The later patriarchal religions and mythologies have accustomed us to look upon the male god as a creator... But the original, overlaid stratum knows of

a female creative being" (Newmann 1955, quoted by Klostermaier 2000: 188). In this paper I shall deal only with this last assumption.

The Female Goddess.

2. K. Klostermaier in his chapter on Shaktism, the worship of the female goddess who embodies *śakti,* the supreme creative power, sums up the evidence for this "original, overlaid stratum" as follows:

> "Neumann assumes for the whole region of the Mediterranean a universally adopted religion of the Great Mother Goddess around 4000 B.C.E., which was revived about 2000 B.C.E., and spread through the whole of the then known world. In this religion the Great Goddess was worshiped as creator, as Lady of men, beasts and plants, as liberator and as symbol of transcendent spiritual transformation.
>
> The Indus civilization also belonged to that tradition in which the cult of the Great Goddess was prominent. Numerous *terracotta* figurines have been found: images of the Mother Goddess of the same kind that are still worshiped in Indian villages today. Several representations on seals that appear connected with the worship of the Great Goddess also exist. On one of these we see a nude female figure lying upside down with outspread legs, a plant issuing from her womb. On the reverse there is a man with a sickle-shaped knife before a woman who raises her arms in supplication. "Obviously it depicts a human sacrifice to the Earth Goddess."
>
> The connections between Śāktism, Mohenjo-Daro civilization, and Mediterranean fertility cults seem to be preserved even in the name of the Great Mother: "Umā for her peculiar name, her association with a mountain and her mount, a lion, seems to be originally the same as the Babylonian Ummu or Umma, the Arcadian Ummi, the Dravidian Umma, and the Skythian Ommo, which are all mother goddesses. The name Durgā seems to be traceable to Truqas, a deity mentioned in the Lydian inscriptions of Asia Minor. There is a common mythology of Great Mother: she was the first being in existence, a Virgin. Spontaneously she conceived a son, who became her consort in divinity. With her son-consort she became the mother of the gods and all life. Therefore we find the Goddess being worshiped both as Virgin and Mother" (2000:188-189).

3. The evidence Klostermaier adduces does indicate that the female, at least in the regions mentioned, anteceded the male divinity skygod, creator-god or whoever. One should also take into account many more studies like the speculative study of R. Graves *The Mother Goddess* (1966), now sadly neglected, or M. Gimbutas' more recent 'Deities and symbols of Old Europe' (1991). Here undoubtedly we must acknowledge the priority of the female genetrix or creatrix or matrix. It is easy to reach this conclusion because the archaeological evidence is indisputable – as shown below with examples from Old Europe, Eastern Mediterranean and Mehrgarh.
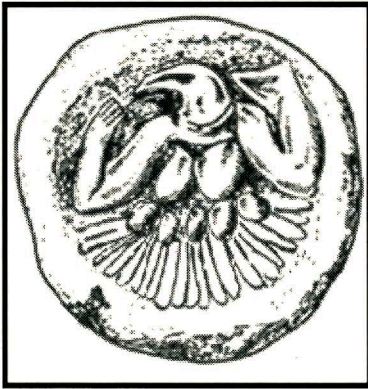
Early Minoan Bird-headed female
Heraklion Museum, Crete
(in Gimbutas 1991).
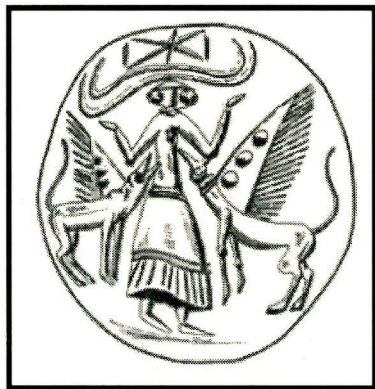
Early Minoan Bee-goddess with
horns(?) and winged dogs,
Heraklion Museum, Crete (in
Gimbutas 1991).

Female figurine from Mnajdra,
Malta, c4000: in Mifsud &
Ventura (1991:III).
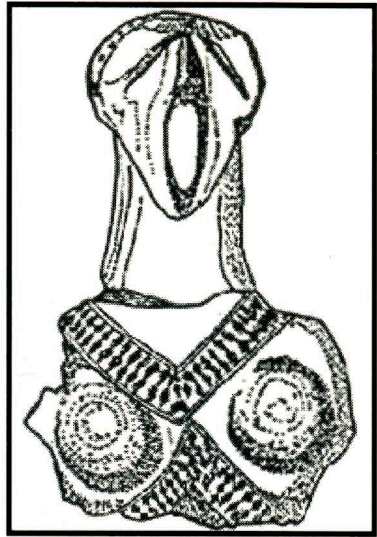
Bird-goddess: Sarajevo Museum;
5th millenium
(in Gimbutas 1991).

The Male God.

However, there is some evidence that suggests, if not phallic or Father God worship, at least an awareness of a male presence and masculine force playing some significant role in the world as is shown by the figures below: –
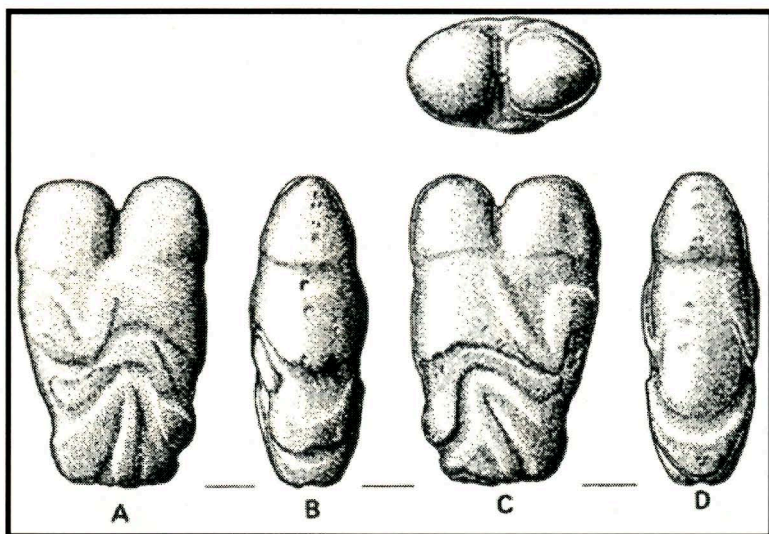
Two figurines in close embrace also suggesting phallic form(s) (and testicles, from above): in Rudgley 1998.
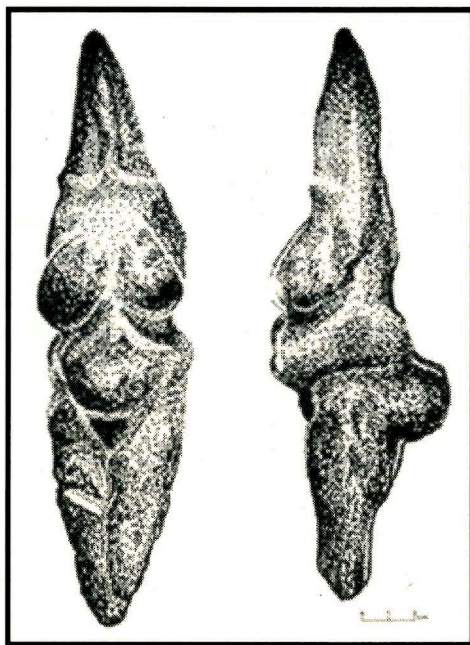
Female figure suggesting phallus, Upper Palaeolithic, Pigorini Museum, Rome (in Gimbutas 1991)

Neither male nor female.

Thus, even in the Mediterranean basin the female is not uniquely dominant. In what is today Israel, some kilometres south of Bethlehem, a small but very complex and significant figurine was found (early 20th cent) and is now in the British Museum, London. It is made from a calcite cobble and is about 10 cm tall and 4 cm broad. It is obviously a pair in close sexual embrace but from certain angles it suggests a penis, possibly two penises touching and, from above, two testicles. This has been assigned to the Natufian period, i.e. 11th or 10th cent BCE. (For details and references, Rudgley 1998:187-9). See also the female figure suggesting a phallus from the Upper Palaeolithic, now in Rome.

Small stone circles, Komakino Iseki, northen Japan.
Jomon structure: from Hancock 2002, pl. 73.

What of early cultures that have no representations of female or male gods, or anything like that? Female and male figures can be easily distinguished in most archaeological remnants in statuary, relief or other iconography. However, there are ancient cultures that have no such obvious tell-tale figures. I have in mind the Jōmon culture in Japan which reaches back to the 11th millennium BC and had only some circular or oval structures, neatly formed out of pebbles and stones. (Rudgley 1998; Hancock 2002). One could of course argue that these forms symbolise the female pudendum while another might argue, just as convincingly, that they represent the male testicle.

Then, there are the ancient rock painting of Lasceaux and Altamira (12000 BC) which, again, show no female or male supreme deity, despite the colourfully rich representation of animals and (less so) humans.

There may be even more difficult cases where there is no representation at all. Because the culture does not express its religious aspirations in concrete imagery but only in poetry and music, in song and dance, and has an ageold oral tradition only. For instance, Plato in his *Republic* delineates an early ideal community of agriculturalists who produce the goods necessary for their frugal needs and for some trade, live peacefully and harmoniously and sing the praises of the gods. Such people would not leave many tokens for archaeologists and anthropologists to erect theories about female or male gods. The Jōmon may have been such a culture, the cultivation of rice being their main economic concern.

Both male and female.

4. The early Vedic civilization is most probably another such case. Following his sources, Klostermaier mentions several terracotta figurines of the Mother Goddess found in the Indus and Sarasvati civilization. But this particular culture, remarkable for its long peaceful duration from c 3000 (early

Harappan) to c 1900 BCE (mature and late) is only one phase of the much longer Vedic civilization that flourished in that region (what is today N.W India and Pakistan) and continued to develop even until late historical times having moved
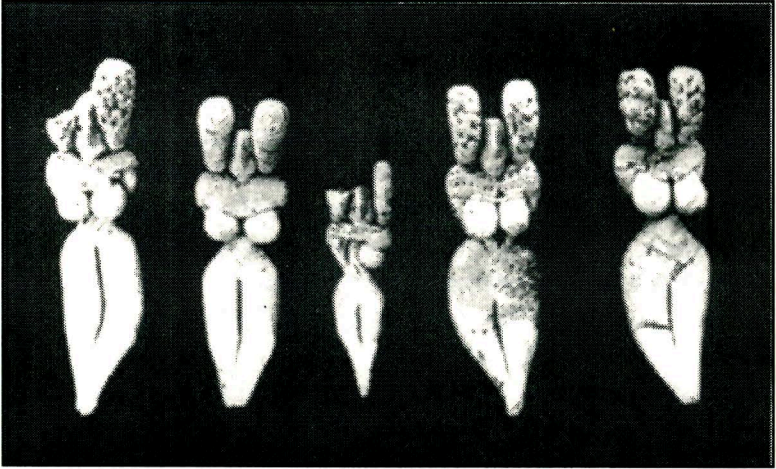
Female figurines (Mehrgarh): from Lal 1999 (PL XXIIA).
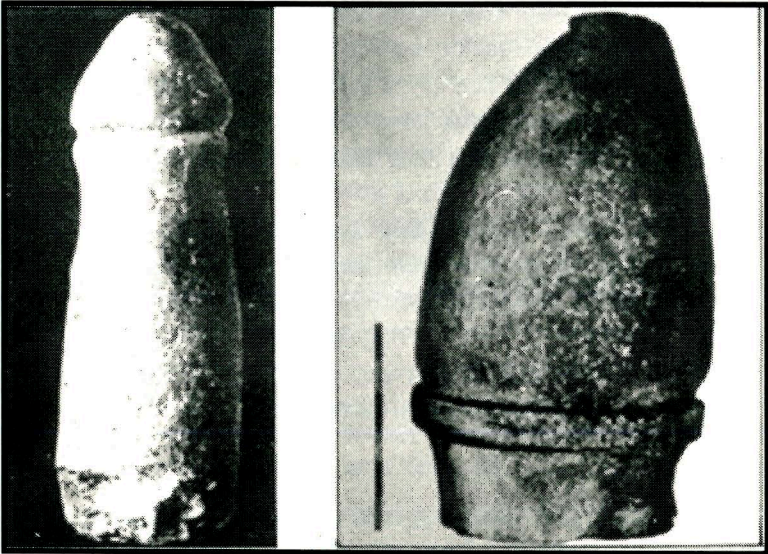
Phallic representations (stone *lingas*: Harappa, Mohenjodaro): from Lal 1997 (PL L: C&D).

eastward to the Gangetic plains. Moreover, the material evidence does not indicate an exclusively Mother Goddess worship: some seals present a male god and some finds are plainly phallic representations suggesting, as in many areas today, *linga* worship – like the two examples below:

As I have shown in several recent studies (Kazanas 2007a, 2005, 2002), this is the material expression of the older Vedic culture that is encapsulated in the hymns of the *Ṛgveda* and seems to converge with the post-Rigvedic literature of the *Brāhmaṇa* and *Sūtra* texts. While the Indus-Sarasvati Culture had literacy, nevertheless no written documents containing the Vedic literature have been found. The earliest secure writing is the Ashoka Rock Inscriptions of the 3rd cent BCE. The early Vedic culture was non-material (in comparison with the Harappan one) and the *Ṛgveda,* its bulk having been composed in the early fourth millennium, as well as much of its subsequent literature, was transmitted orally until well into historical times.

What was the religion of the *Ṛgveda*? Here archaeology can tell us nothing. For no objects suggestive of religious significance and, certainly, no representations of a female or male supreme deity have been found in that region from the fourth millennium and before. (Some few claim that *RV* 4.24.10 "Who will buy this my Indra" refers to a statuette or icon of Indra. But no word for "statuette" or "icon" is used and no figure of a male god holding anything remotely resembling a *vajra* 'bolt' has been found in relief, seals or statuary even in very late Harappan sites. So the phrase may refer to a transfer of favour.) Yet, the *RV* abounds in gods and goddesses. But in this document, probably the earliest in the cultural history of mankind, we see an unusual situation.

Polytheism.

5. The RV has about 1000 hymns praising various gods. The names of several of them appear in other Indo-European

cultures. Let us examine some examples (for more details, Kazanas 2006):

The Firegod *Agni appears in* Hittite as *Agnis* and in Slavic as *Ogen* (and variants) while the word 'fire' is in Latin *ignis* and Lithuanian *ugnis*.

The Skygod *Dyaus* appears in Hittite as *D-Siu-s*, in Greek as *Zeus*, Latin *Ju[s]-piter* and Germanic *Tiwaz*.

The Storm- and Rain-god *Parjanya* appears in Slavic as *Perunŭ*, Baltic *Perkunas* (and variants) and Germanic *Fjorgyn*.

The Sungod *Sūrya* appears in Greek as *Hēlios*, Latin *Sol* and Baltic *Saule*.

The Dawn-goddess *Uṣas* appears in Greek as *Ēōs*, Latin *Au[s]rora* and Germanic *Eos-tre* (and variants).

The female deities are few in the *RV*. Apart from Uṣas we meet *Aditi* 'the Unbounded One', a kind of Mother Goddess, *Rātrī* benevolent goddess of night, *Sarasvatī*, a river goddess who has also a celestial form and *Pṛthivī*, Earth-goddess. There are several others but they are mere names – *Bṛhaddivā*, *Indrāṇī* etc. All the important gods are male. Apart from those mentioned above, there is *Indra*, the warrior god *par excellence*; *Varuṇa* another sky-god who is also connected with waters and promulgates the ethical code; *Soma,* both moon-god and the drink that induced ecstasy; *Aryaman* of contracts; *Pūṣan,* another aspect of the sun etc, etc. Nonetheless a very important goddess is *Vāc* 'Speech' (*RV* 10.125): she declares her attributes in the first person as mother of the gods, giver of wealth, queen, immanent in all beings, an all-pervading power and encompassing all creation.

Thus here we have glorious polytheism.

That One: neither male nor female.

6. However, there are many statements in the hymns that all these divinities are expressions of a supreme Power, a

Godhead or Absolute, that is otherwise unnamed and undescribed. And in this, the Vedic Tradition differs from all the other cultures that we know. Taking cosmogonic myths from Iran, Greece, Rome and North Europe, some scholars rightly state that in these Traditions the creation arises from two primordial elements, "the action of heat on water"; then they go further and generalize – not rightly – that this process reflects "a multi-layered dualism that pervades Indo-European myth and religion". (Stone 1997, ch 5; also Puhvel 1989: 277). These scholars would have been right if they had written "some of later Indo-European religions"; because the early one, as seen in the *RV*, is quite different. In the creation hymn 10.129 (or *nāsadīya sūkta* as it is known in the native tradition from the hymn's first hemistich) all creation arose out of That One *tad-ekam*, alone, that "breathed without air of its own power" (*ānid avātām svadhāyā tád ékam*). Only in the third stānza appear *Salilám* 'fluxuating energy' (usually but wrongly translated as 'water') and *tápas* 'force of transformation/materialization' (usually and wrongly given as 'heat') within *támas* 'darkness', within *tucchyám* 'void'. Then comes the self-begotten one-existence *ābhu-* which evolves and becomes the creation. In stanza 4 rises *kāma* which entwines and pervades *adhi-sam-ā-vṛt-* that "becoming" and later still creative forces and the gods. Here at least, it is a Primal Unity that is the source of all manifestations: neither female nor male.

All deities are expressions of that supreme First Cause. This is stated explicitly in several hymns, both early and late. *RV* 1.164.6 and 10.114.5 say clearly that the wise poets speak of it, although One, in many ways and forms giving it the names of various divinities like Agni, Yama, Indra etc as in 164.6 cd: – *ékam sád víprā bahudhá vadanti: agním yamám mātarísvānam-ahuḥ*. *RV* 8.58.2 says again: *ekam vā idám ví babhūva sárvam* 'It being One has variously (*vi*) become this All [and Everything]'. The idea that all gods are manifestations of the One is reinforced by the

acknowledgement that the gods are gods by virtue of a single godhood or god-power of which they partake: this is made clear in the refrain of hymn 3.55: *mahád devánām asuratvám ékam* 'Single is the great god-power (or 'lord-power' *asuratva*) of the gods'. Consider also 3.54.8cd: – *éjad dhruvám patyate víśvam-ékam cárat patatŕ víṣuṇaṃ víjātám* – 'moving yet still, the One (*ékam* neuter) governs the whole-as-unity, (what moves and what stands firm,) what walks and flies, all this manifest disparate (*vi*) multiplicity'.

Thus knowledge of the One is present in the family collections of hymns, the older books of the *RV*.

Utilizing different material in the *RV*, K. Werner made the same point back in 1989 (see also Kazanas 2002).

The One in different cultures.

7. It may be thought that only the *RV* speaks of a Primal Unity, unmanifest and undescribed. However a careful reading of the Pyramid Texts, the oldest religious writings in Egypt (see Faulkner 1969), reveals that there also the multiplicity of deities, male and female, comes from a primordial Unity called *Atum*, 'the Complete One' or *Nun* 'the primal substance' (usually given as 'water') and J. BottÈro, one of the foremost authorities on early Mesopotamian culture, pointed out that polytheism there may well have derived from a primordial Unity, unnamed (Bottéro 2001:74). Thus the *RV* and the early Vedic culture is not alone in acknowledging the genderless First Cause of everything.

Another common assumption is that the Judaic religion in the *Old Testament* (or *Pentateuch*) presents for the first time monotheism. This assumption is wrong on three counts. First, the Hebrews emerge into historical times c 12th cent BCE. At best, their *Old Testament* cannot be older than c 1800 when its first book, *Genesis*, was perhaps composed, borrowing much material from the Mesopotamian culture (the primordial waters, man's creation out of clay, the flood

etc). Second, the god Jehovah/Yahveh appears, upon a close inspection, to be only a superior god among many others, a kind of *primus inter pares*; throughout the *Old Testament* god used the plural "we" as if there are many gods; the name *Elohim*, usually translated as 'god', is in fact plural 'gods'; the Jews worshipped many other gods at times and principally Baal; psalm 81 or 82 states that "God stands in the assembly of gods and in their midst he will judge the gods". Third, Yahveh is not an impartial, universal spirit but very partisan and favourable towards the Jews; a jealous and vindictive deity who constantly interferes in the affairs of mankind and punishes people because of sins committed by their distant forefathers. Thus, when all these considerations are taken into account, it is difficult to regard the Judaic Yahveh as the prototype of monotheism. A fourth point is that as the Indians of the Mature Harappan culture had established trade-centres in Mesopotamia c 2300 (McEvilley 2002; Lal 1997) and as the Jews were in Ur c 1900 (although this date is in dispute: Dunstan 1998), it is possible if not probable that they adopted their kind of monotheism from the Indians themselves there. The hints in the Egyptian and Mesopotamian cultures and much more so, the clear statements in the early Vedic tradition have a prior claim to monotheism in its truer form of a transcendental, universal Absolute.

But, of course, this non-material Oneness that is beyond the senses is not so easy to worship. How can we worship something that is Unmanifest and without a finite, conceivable form?... For this reason most probably the Primal Unity slipped away into the dimmest background of ancient religion while different deities, male and female, came to the foreground and captured the attention and devotion of the large majority of the peoples. Later came monotheistic religions – Judaism, Christianity, Islam. In Judaism and Islam it is the one God, Yahveh and Allah respectively, that demands the attention of the faithful. But in Christianity, it is

also other powers, the Son, Christ, the Holy Virgin, angels and saints that claim the people's devotion.

8. Can we say that the genderless Unity preceded the concept of the Mother Goddess? Strictly speaking, the material representations of the female Creatrix coming as they do from the fifth millennium precede a document like the *RV*, which is of the fourth millennium, or the religions of Mesopotamia and Egypt which cannot be much before 3000BCE – at least as we know their most ancient forms. (At the same time we must take into account the archaeological evidence in artefacts strongly suggestive of the male force, as shown in some of the figures – artefacts which are as old as, if not older than, the female figures.) On the other hand, the One Absolute, infinite and indescribable, could not possibly be represented in a material form that would be recognized by us. In India there were representations of many deities (Viṣṇu, Śiva, Kṛṣṇa, Lakṣmī, etc) but not of the Absolute Brahman. Leaving aside Egypt and Mesopotamia, we cannot rule out the possibility that the Vedic oral tradition goes back many millennia before the fourth. Nor can we dismiss entirely the concept of the cyclical recurrence of events, the periodic emergence and dissolution of the creation, in large units of time called *yuga*, as found in the Vedic tradition. In this view of creation, mankind starts in the perfection and unity of the *Kṛta-yuga* (or Sat-yuga) 'the Age of Truth and Goodness'; then they slip into the *Tretā-yuga* where *dharma* 'righteousness' or 'virtue' diminishes by a quarter and division enters into the scene, but there is still much piety and knowledge; from this they pass into the Dvāpara where *dharma* diminishes by a further quarter and people are no longer governed by reason but by uncontrolled feeling; finally they drop into the Kali-yuga where *dharma* is only at one fourth of its force and people are governed by their appetites, envies and attachments. Their language, too, which began as a unitary mighty

instrument of creativity and communication devolves gradually into many different tongues where words are divorced from concepts, things and actions: e.g. the sounds making up the word "abbot" or "zoo" do not suggest at all the form and function (i.e. the meaning) of these material phenomena.

Thus it is possible, however remote it may seem to us today (and utterly unacceptable to a grossly materialist mindset), that some people preserved with their oral tradition the knowledge of a Primordial Unity, neither male nor female, from which both male and female devolved. This implies, of course, that all religions or philosophical systems appearing in historical times or in the archaeological material records are devolutes or fragmented, incomplete memories of that all inclusive and coherent doctrine where the many are derivatives of the One. Even a monotheistic religion like that of the Hebrew people probably derived from such a unitary doctrine and its system (Kazanas 2005, 2007). In historical times, of course, we find much evidence of cross-influences between the various religions and such interactions may well have occurred even in pre-historic times as people migrated or traded. That the many devolved from the One is quite the opposite of what historians of religion and anthropologists teach, publishing as they do the notion that ancient or "primitive" religion began with polytheism and animism before developing into monotheism and/or a higher ethical code. But the evidence of the Mesopotamian early religious writings, as Bottéro pointed out, the Egyptian Pyramid Texts and especially the _Ṛgveda_, direct us to this conclusion, that in earliest times the many gods and goddesses were expressions of the One, neither male nor female.

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Dr. Nicholas Kazanas is Greek-born. He was educated chiefly in Britain. He read English Literature in University College; Economics and Philosophy at the School of Economic Science; Sanskrit in the School of Oriental and African Studies — all in London. He did his post-graduate studies at SOAS and in Pune and Varanasi. He taught for some years in London. For more than 20 years now he is the Director of Omilos Meleton, a Cultural Institute in Athens. He has various publications in Greek; several peer-reviewed academic Journals, Western and Indian, have printed his articles on Indology.
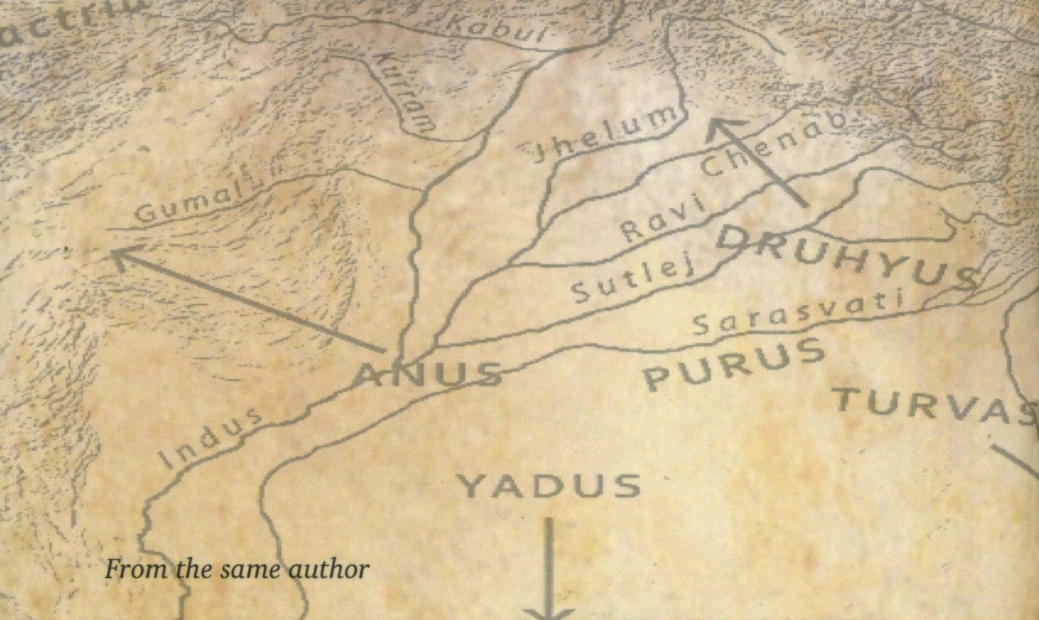
He is currently on the Editorial Board of several University Journals (ICFAI, Adyar Bulletin etc) and Chief Editor of Vedic Venues.

From the same author

INDO-ARYAN ORIGINS AND OTHER VEDIC ISSUES

This book contains studies discussing the thorny problem of Indo-aryan origins and finds its solution in indigenism. The studies examine various aspects of the Indo-European common heritage and of the Vedic tradition. One study analyses the position of the early Hittite culture in relation to the other IE branches and especially Vedic. Another traces the common names of deities in the different IE cultures. Two studies compare Vedic and Mesopotamian and Vedic and Egyptian interconnections respectively. Others examine purely Vedic issues like the religio-philosophical thought in the Vedas and the real meaning of the words *pur* 'defensive structure' and *samudra* 'confluence of waters, ocean'. In all these studies the Vedic inheritance emerges as the oldest of all IE traditions, older than even the Near eastern cultures; the bulk of the *Ṛgveda* hymns appear to have been composed in the 4th millennium; and the Indo-aryans are shown to have been residing in North-West India (and Pakistan) since about 5000 BCE. The writer arrives at these conclusions by examining and comparing evidences from the linguistic, literary, anthropological and archaeo-logical fields (and from Genetics).

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